

This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

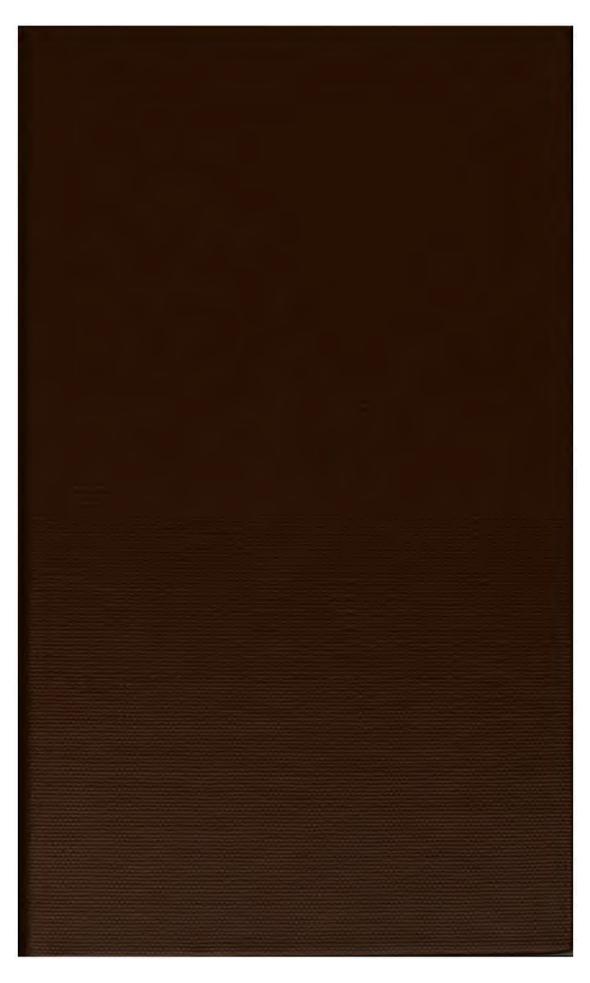
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

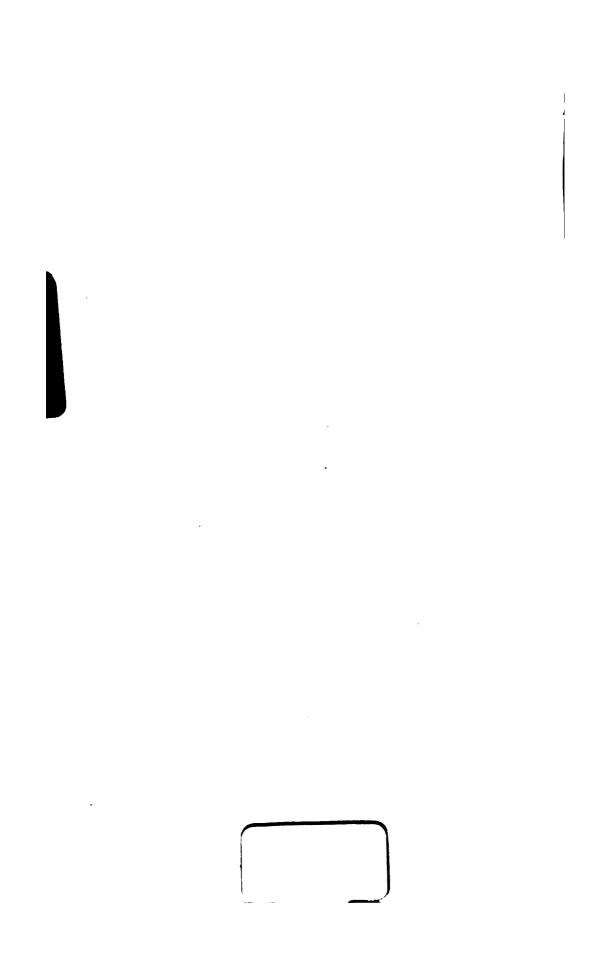
We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + Refrain from automated querying Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at http://books.google.com/



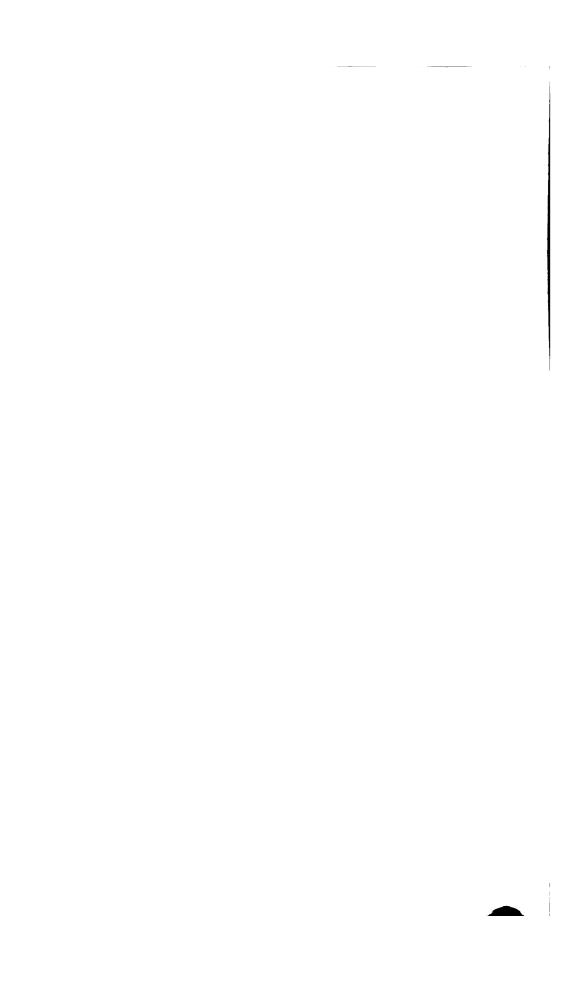












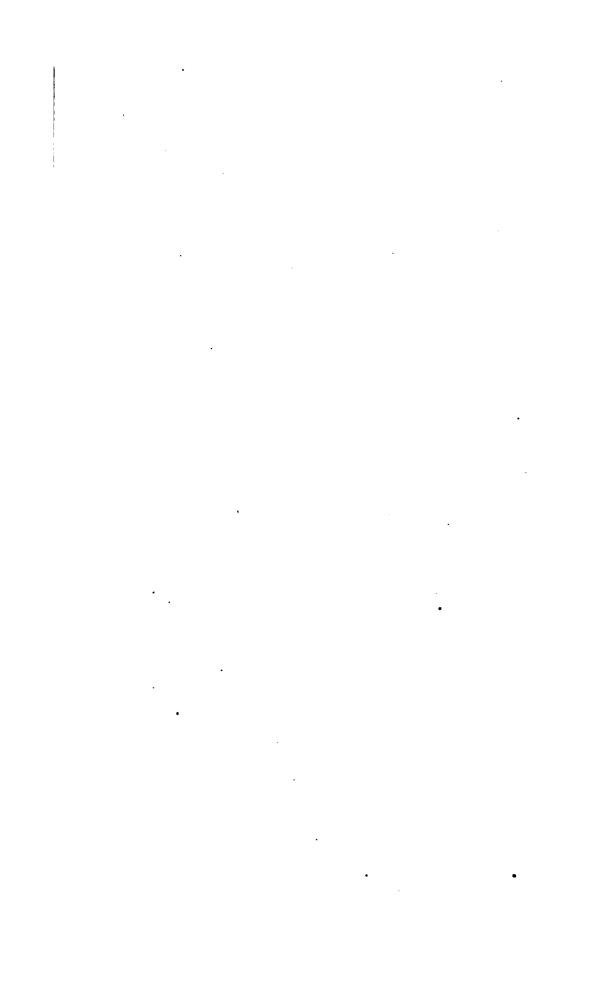
•	

• . • * ***** . . : • •

• . .

VOL. X.

41



SMITHSONIAN

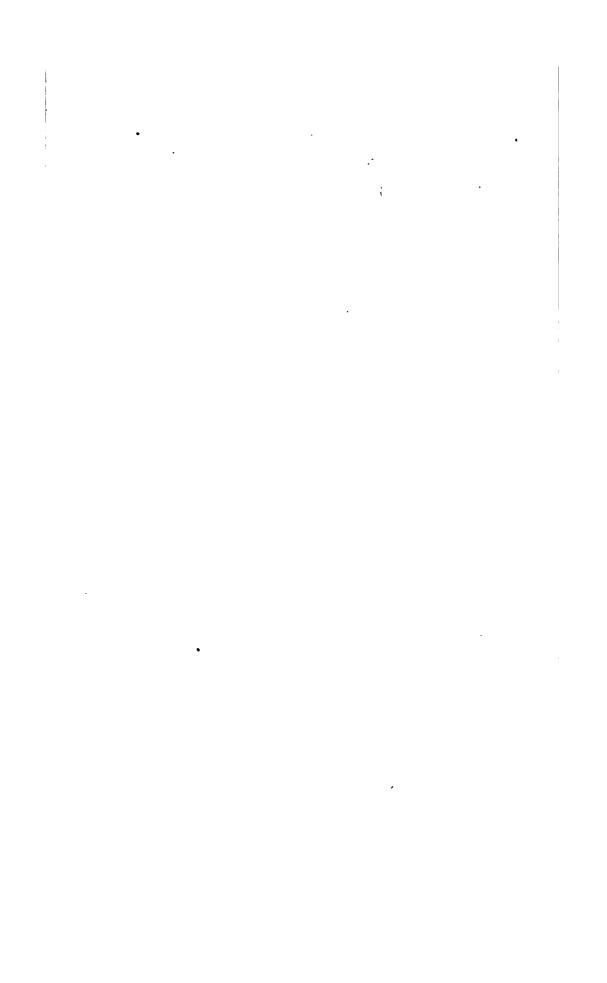
MISCELLANEOUS COLLECTIONS.

VOL. X.



LEVERY MAN IS A VALUABLE MEMBER OF SOCIETY WHO BY HIS OBSERVATIONS, REMEARGERS,
AND EXPERIMENTS PROCURES KNOWLEDGE FOR MEN."—SMITHSON.

WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION.
1878.



CONTENTS.

Advertise		PA6 ▼i
ARTICLE	I. THE MOLLUSES OF WESTERN NORTH AMERICA. By PHILIP P. CARPENTER, B.A., Ph.D. Embracing the Second Report made to the British Association on this subject, with other papers; reprinted by permission, with a General Index. December, 1872. Pp. 446.	
ARTICLE	II. ARRANGEMENT OF THE FAMILIES OF MOLLUSES. Prepared for the Smithsonian Institution by Theodore GILL, M.D., Ph.D. February, 1871. Pp. 65.	
ARTICLE	III. Instructions for Observations of Thunder Storms. By Prof. Joseph Henry. P. 1.	
ARTICLE	IV. CIRCULAR RELATIVE TO HEIGHTS. By Prof. Joseph HENEY. Pp. 2.	
ARTICLE	V. Directions for constructing Lightwing-Rods. By Prof. Joseph Henry. Pp. 3.	
ARTICLE	VI. QUERIES RELATIVE TO TORNADOES. By Prof. JOSEPH HENRY. Pp. 4.	
ARTICLE	VII. QUESTIONS RELATIVE TO THE FOOD FISHES OF THE UNITED STATES. By Prof. S. F. Baird. Pp. 7.	
ARTICLE	VIII. MEMORANDA OF INQUIET RELATIVE TO THE FOOD FISHES OF THE UNITED STATES. By Prof. S. F. BAIRD. Pp. 5.	
ARTICLE	IX. LIST OF THE INSTITUTIONS, LIBRARIES, COLLEGES, AND OTHER RETABLISHMENTS IN THE UNITED STATES IS CORRESPONDENCE WITH THE SMITHSONIAN INSTITUTION. July, 1872. Pp. 255.	
ARTICLE	X. List of Foreige Correspondents of the Smithsonian Institution. Corrected to January, 1872. [Fourth Edition.] April, 1872. Pp. 96.	
ARTICLE	XI. CHECK LIST OF PUBLICATIONS OF THE SMITHSONIAN IN-	

·

ADVERTISEMENT.

THE present series, entitled "Smithsonian Miscellaneous Collections," is intended to embrace all the publications issued directly by the Smithsonian Institution in octavo form; those in quarto constituting the "Smithsonian Contributions to Knowledge." The quarto series includes memoirs embracing the records of extended original investigations and researches resulting in what are believed to be new truths, and constituting positive additions to the sum of human knowledge. The octavo series is designed to contain reports on the present state of our knowledge of particular branches of science: instructions for collecting and digesting facts and materials for research: lists and synopses of species of the organic and inorganic world: museum catalogues: reports of explorations: aids to bibliographical investigations, etc., generally prepared at the express request of the Institution, and at its expense.

The position of a work in one or the other of the two series will sometimes depend upon whether the required illustrations can be presented more conveniently in the quarto or the octavo form.

In the Smithsonian Contributions to Knowledge, as well as in the present series, each article is separately paged and indexed, and the actual date of its publication is that given on its special titlepage, and not that of the volume in which it is placed. In many cases, works have been published, and largely distributed, years before their combination into volumes.

While due care is taken on the part of the Smithsonian Institution to insure a proper standard of excellence in its publications, it will be readily understood that it cannot hold itself responsible for the facts and conclusions of the authors, as it is impossible in most cases to verify their statements.

JOSEPH HENRY,

Secretary S. I.

(vii)

·

.

•

•

.

•

SMITHSONIAN MISCELLANEOUS COLLECTIONS.

----- 252 -

THE

MOLLUSKS

01

WESTERN NORTH AMERICA.

PHILIP P. CARPENTER, B.A., Ph.D.

EMBRACING THE SECOND REPORT MADE TO THE BRITISH ASSOCIATION
ON THIS SUBJECT, WITH OTHER PAPERS; REPRINTED BY
PERMISSION, WITH A GENERAL INDEX.



WASHINGTON: SMITHSONIAN INSTITUTION DECEMBER, 1872.

ADVERTISEMENT.

THE opportunity afforded by Mr. Carpenter's visit in 1859-60 to the United States, was embraced to secure his services in naming and arranging the shells collected by the United States Exploring Expedition and other parties on the Pacific Coast of North America. Mr. Carpenter, having previously presented to the British Association a report on the state of knowledge in regard to the mollusks of the west coast of North America, embodied the additional information which he obtained, chiefly through the Smithsonian Institution, in a second report to the same Association; and now, in order to facilitate the study of this class of animals by the American student, this work is republished with supplementary papers, from stereotype copies of the original pages.

JOSEPH HENRY, Secretary S. I.

SMITHSONIAN INSTITUTION, WASHINGTON, November, 1872.

> PHILADELPHIA: COLLING, PRINTER.

TABLE OF CONTENTS.

								3	PAG
Advertisement		•	•	•	•	•	•	•	i
Introduction	•	•	•	•	•	•	•	•	1
LIST OF PAPERS	REPRINT	MED IN	THIS V	OLUMB		•	•	•	í
u "	NOT RE	PRINT	d in t	HIS VOLU	MIE.	•	•	•	I
Armanasa.	WD 01								11

(iii)

• • • • • .

INTRODUCTION.

AFTER the publication of my first "Report on the present state of our knowledge with regard to the Mollusca of the West Coast of North America," undertaken at the request of the British Association for the Advancement of Science, and printed in their Report for 1856, I visited America in order to arrange the first duplicate series of the great Reigen Collection of Mazatlan Shells which I had presented to the New York State Museum at Albany. It was one of the special objects of my visit to examine the types of previously described species in the United States, that I might compare them with those known in England. Having visited Washington to examine the types of the United States Exploring Expedition (Wilkes'), I was requested to spend the winter of 1859-60 in unpacking and arranging the shells belonging to the National Museum under its charge; and after my return to England I received from time to time the various collections sent to the Institution from the West Coast as they arrived; all of these were duly compared with the types in the Cumingian and other British collections.

Being thus in a position to correct a large number of unavoidable errors in my first Report, and to add a great deal of fresh information from American sources (chiefly obtained through the Smithsonian Institution), I was requested by the British Association to embody the material in a "Supplementary Report" on the same subject as the first. Knowing how difficult it is for American students to obtain access to serial publications, I obtained permission, in behalf of the Institution, to stereotype this second report, and the papers connected with it, which appeared in the "Proceedings of the Zoological Society," the "Annals and Magazine of Natural History," and the "Journal de Conchyliologie."

The present volume consists, therefore, of a reprint from these stereotype plates, with the original paging at the top, and the Smithsonian paging at the bottom; and of a general index of species.

The index was prepared (at the expense of the Smithsonian Institution) by Mr. E. Taylor, Student at McGill College. It includes not only the present volume but all my previous English publications on the subject, of which the principal are the First British Association Report and the British Museum Mazatlan Catalogue. All references to these works not reprinted have the page-number prefixed by a Roman Capital (O to X), by which they can be at once distinguished from the simple numbers which refer to the foot-page in this volume. Students who want an index to the First Report will fix the eye on the initial O; to the Mazatlan Catalogue on P.

In an accompanying list will be found an enumeration of all my papers published in European journals relative to American conchology, and for the most part reprinted in the present collection. In this, however, is not included any of the contributions to American serials, as the Journal of the Academy of Natural Sciences of Philadelphia, the Proceedings of the California Academy, or the American Journal of Conchology.

My principal object in the preparation of these works has been to make out and compare the writings of previous naturalists, so that it might be possible for succeeding students to begin where I left off, without being obliged to waste so large an amount of time as I have been compelled to do in analyzing the (often inaccurate) work of their predecessors.

As the work of previous writers, whether satisfactory or otherwise, is duly tabulated in my Reports, so that others may judge of its value as well as I, it is not fair (as is often done) to quote from these Reports as on my authority. I was simply the historian, not the original writer. In the First Report I was a novice in the scientific world, and rarely ventured on criticisms; in the second, I allowed myself with more confidence to state my own conclusions, because I found that others had not enjoyed the remarkable facilities of comparing types which fell to my lot, and which (in many instances) cannot be renewed. Since that time, Nuttall, Gould, Rich, Judge Cooper, and especially Hugh Cuming, have been called to another world; their collections

have changed hands, and fresh causes of error have crept in. The present condition of the Cumingian Collection has been faithfully described by Dr. Gray in the Proceedings of the Zoological Society; and those who will take the trouble to compare his review of the Calyptræidæ, after the destruction of original labels consequent on Reeve's Monograph, with that which I gave in the Mazatlan Catalogue, while these labels were still fixed to the shells, will appreciate the advantages which I formerly enjoyed.

Readers who may discover any uncorrected errors in this volume, or in any of my other works, are urgently requested to apprise me of them (Box 193½ P. O., Montreal, C. E.), in order that they may be corrected in the Report of the Mollusca which Prof. Whitney has requested me to prepare for the California Geological Survey.

PHILIP P. CARPENTER.

MONTREAL, July 17, 1872.

	•			
		,	·	
		•		
				!
				i
		•		

LIST OF PAPERS

ON

AMERICAN MOLLUSCA

PUBLISHED IN EUROPEAN WORKS BY

P. P. CARPENTER.

REPRINTED.

A.

Supplementary Report on the Present State of our Knowledge with Regard to the Mollusca of the West Coast of North America. Page 1.²

From the Report of the British Association for the Advancement of Science, for 1863, pp. 517—686. Published in August, 1864. Extra copies, with title-page, dated 1864.

В.

Review of Prof. C. B. Adams' "Catalogue of the Shells of Panama," from the Type Specimens. Page 173.

From the Proceedings of the Zoölogical Society of London, June 23, 1863, pp. 339—369.

C.

Diagnoses of New Forms of Mollusks collected at Cape St. Lucas, Lower California. By Mr. J. Xantus. Page 207.

From the Annals and Magazine of Natural History. Third Series, Vol. XIII., pp. 311—315, April, 1864. Ibid. (Nos. 15—36) pp. 474—479, June, 1864. Ibid. Vol. XIV. (Nos. 37—52), pp. 45—49, July, 1864.

D.

Contributions towards a Monograph of the Pandoridæ. Page 223.

From the Proceedings of the Zoölogical Society of London, pp. 596—603, November 22, 1864.

(ix)

The references are to the bottom paging.

E.

Diagnoses of New Forms of Mollusca from the Vancouver District. Page 233.

From the Annals and Magazine of Natural History. Third Series, Vol. XIV. (Nos. 5-37), pp. 423-429, December, 1864. Ibid. Vol. XV. (Nos. 37-56), pp. 28-32, January, 1865.

F.

Diagnoses of New Forms of Mollusca from the Vancouver District. Page 247.

From the Proceedings of the Zoölogical Society of London, pp. 201—204, February 14, 1865.

G

Diagnoses of New Species and a New Genus of Mollusks, from the Reigen Mazatlan Collection; with an Account of Additional Specimens presented to the British Museum. *Page* 253.

From the Proceedings of the Zoölogical Society of London, pp. 268—273, March 14, 1865.

H.

Descriptions of New Species and Varieties of Chitonidæ and Acmæidæ, from the Panama Collection of the late Prof. C. B. Adams. Page 263.

From the Proceedings of the Zoölogical Society of London, pp. 274—277, March 14, 1865

I.

Diagnoses of New Species of Mollusks, from the West Tropical Region of North America, principally collected by the Rev. J. Rowell, of San Francisco. Page 269

From the Proceedings of the Zoölogical Society of London, pp. 278—282, March 14, 1865.

K.

Diagnoses of New Forms of Mollusca, from the West coast of North America, first collected by Col. E. Jewett. Page 277.

From the Annals and Magazine of Natural History. Third Series, Vol. XV., pp. 177—182 (Nos. 373—386), March, 1865. Ibid. pp. 394—399 (Mangelta variegata to end), May, 1865.

L.

Diagnoses of New Forms of Mollusca, collected by Col. E. Jewett, on the West Tropical shores of North America. Page 291.

From the Annals and Magazine of Natural History. Third Series Vol. XV., pp. 399—400, May, 1865.

M.

Diagnoses des Mollusques nouveaux provenant de Californie et faisant partie du Musée de l'Institution Smithsonienne. Page 297.

From the Journal de Conchyliologie, Vol. XII. (Third Series, Vol. V.) pp. 129—149, April, 1865.

N.

On the Pleistocene Fossils collected by Col. E. Jewett, at Santa Barbara, California; with Descriptions of New Species. *Page* 319.

From the Annals and Magazine of Natural History, Third Series, Vol. XVII., pp. 274—278, April, 1866.

NOT REPRINTED.

O.

Report on the Present State of our Knowledge with Regard to the Mollusca of the West Coast of North America.

From the Report of the British Association for the Advancement of Science, for 1856, pp. 159—368. Published in 1857. Extra copies with title-page, list of plates with references to figures (4 pages), dated 1857. Not reprinted, but referred to under "07 in the general index.

P.

Catalogue of the Reigen Collection of Mazatlan Mollusca in the British Museum.

Bach sheet dated: July, 1855—June, 1857. The Bryozca, by G.
Busk, Esq. Printed by order of the Trustees at the Oberlin Press, Warrington. 552 pp. First Edition, with Preface as arranged by Dr. J. E. Gray, on sale at the British Museum, price 8s. Second Edition, with Author's Preface, accompanying duplicate collections of the shells, published simultaneously.

NOT REPRINTED (continued).

Q.

Descriptions of (supposed) New Species and Varieties of Shells, from the Californian and West Mexican Coasts, principally in the Collection of H. Cuming, Esq.

Proceedings Zoölogical Society, Part xxiii, 1855, pp. 228-235.

R

Notes on the Species of Hipponyx inhabiting the American Coasts, with Descriptions of New Species.

Ditto, Part xxiv, 1856, pp. 3-5.

S.

Description of New Species of Shells collected by Mr. T. Bridges in the Bay of Panama and its vicinity, in the Collection of Hugh Cuming, Esq.

Ditto, pp. 159-166.

T.

Description of New Species and Varieties of Calyptræidæ, Trochidæ and Pyramidellidæ, principally in the Collection of Hugh Cuming, Esq. [From American and other seas.]

Ditto, pp. 166-171.

U.

Descriptions of Shells from the Gulf of California, and the Pacific Coasts of Mexico and California. Part II. By A. A. Gould, M.D., and Philip P. Carpenter.

Ditto, pp. 198—208.

77

Monograph of the Shells collected by T. Nuttall, Esq., on the Californian Coast, in the years 1834-5.

Ditto, pp. 209-229.

W.

First Steps towards a Monograph of the Recent Species of Petaloconclus, a genus of Vermetidæ.

Ditto, pp. 313-317. (With wood-cuts.)

X.

First Steps towards a Monograph of the *Cœcidæ*, a Family of the Rostriferous Gasteropoda." [Chiefly from the American seas.]

Ditto, Part xxvi, 1858, pp. 413—444.

Α

SUPPLEMENTARY REPORT

ON THE

PRESENT STATE OF OUR KNOWLEDGE

WITH REGARD TO

THE MOLLUSCA OF THE WEST COAST OF NORTH AMERICA.

BY

PHILIP P. CARPENTER, B.A., PH. D.

From the Report of the British Association for the Advancement of Science, for 1863, pp. 517—686. Published in August, 1864. Extra copies, with title-page, dated 1864.

	; 4				
		·			
	•				i
· · · · · · · · · · · · · · · · · · ·					: : : :
•				,	
			•		•

Supplementary Report on the Present State of our Knowledge with regard to the Mollusca of the West Coast of North America. By PHILIP P. CARPENTER, B.A., Ph.D.*

THE object of the present Report is (1) to correct the errors which have been observed in the first Report ("Report &c." 1856, pp. 159-368); and (2) to point out the fresh sources of information which have been rendered available since that period. For convenience of comparison, the paragraph numbers refer to those of the first Report in the corrections, and are continued from them in the addenda. In the bibliographical portion, the criticisms by the writer of this Report are inserted in []; a distinction not always attended to in the former volume, in consequence of which erroneous names and localities have been attributed to the reviewer, instead of to the authors quoted.

22. Introduction.—(Line 4 from bottom.) The river Willamette flows northwards (Gld.).

23. Early Writers.—The only Californian shell described by Linnæus is Turbo sanguineus,—T. coccineus, Desh.; v. Hanl. Ips. Linn. Conch. p. 334. The types are too much worn to decide whether they came from the North Pacific or (as is more probable) from the Mediterranean. In Gmelin's edition of Linnæus, Lipsiæ, 1788–1790,—which is, in great measure, a translation from a German work published a few years in advance [teste Hanley],—the following species are assigned to the "West Coast of America," probably on the authority of Martyn:—page 3529, Murex foliatus: 3702, Patella pecten: 3712, Patella calyptra. The last two seem exotic.

Many West-coast species had found their way into English collections during the last century, at'a much earlier date than was expected at the time of the first Report. They were mainly derived from the voyages of Capt. Cook and other circumnavigators. Capt. Cook was accompanied by Solander. as naturalist, at the instance of Sir Joseph Banks. His shells passed into the hands of Mr. Humphrey, the dealer, at whose death the remainder, a thousand boxes, became the property of the elder Sowerby, and (in part) of Mawe [teste Hanley]. They took their chance of being figured or described by the early conchologists. The localities are (as might be expected) often interchanged, but have been quoted by later authors, who have not thought fit to avail themselves of more correct sources of information.

The first accurate delineations are by Thomas Martyn, in his 'Universal Conchologist, London, 1784. Those who only know this book from Chenu's reprint, Paris, 1845, can form but a poor idea of the exquisite beauty of the original work. Of this, very few copies are accessible; but it may be consulted at the British Museum, the Royal Society, and the Royal College of Surgeons.

- 16
- Patella tramoserica, Mart. N.W. C. America, very rare. [N. Zealand.]
 Patella calyptra, Mart. N.W. Coast of America, very rare. [Not identified: resembles Crep. adunca. without deck. Hanl. con-18
- siders it a Hipponyx, like australis.]
 4. Trochus inequalis, Mart. Friendly Isles, common. [Does not closely resemble the Japan and Vancouver species,—Pachypoma 31 gibberosum, Chemn.]
 Trochus canaliculatus, Mart. N. Zealand, rare.
 Trochus annulatus, Mart. N. Zealand, very rare.
- 32 10 1.
- 10
- Trochus costatus, Mart. St. George's Sound, rare. [= Calliostoma
- filosum, castaneum, ligatum, and modestum.]

 In consequence of the expected arrival of fresh materials, this report has been corrected and continued up to the period of going to press.

 Warrington Free Museum and Library, Aug. 1st, 1864.

- No. Plate. Fig. 48 13,14 1. Buccinum liratum, Mart. St. George's Sound, most rare. [=F. de-2. Buccinum plicatum, Mart. [non Linn.] St. George's Sound, common.
 - 13 [=crispatum, +compositum, Chemn., =lactuca, &c., Esch.]
- Buccinum lima, Mart. St. George's Sound, rare. [Probably P. decem-46 15
- costata, Midd.; the variety with numerous ribs and flattened spire.]

 2. Buccinum saturum, Mart. St. George's Sound, most rare. [Like Chr. liratus, with keels evanescent.] 47 15
- 62 20 2. Haliotis pulcherrima, Mart. St. George's Sound, most rare. [Pacific Is.]
- 66 1. Purpura foliata, Mart. North-west Coast of N. America, rare.
- 76 28
- Trochus pulligo, Mart. St. George's Sound, common.
 Pectunculus corbis, Mart. Pulo-Condore, most rare. [= Cardium Nuttalkii, Conr., teste Desh. Cum. The figure is not so accurate as most
- of the others; but the colouring is characteristic.]

 1. Pecten rubidus, Mart. [non Hds.] Newfoundland, rare. [=P. Islan-153 53 dicus, Müll.

Many of the figures of Martyn were reproduced by Chemnitz, in his comprehensive continuation of Martini's 'Conchylien Cabinet,' 1780-1795. Unhappily, though often quoted for generic and specific names, he did not adopt the binomial nomenclature (except in vol. xi.), but described each shell in two or more words, as it happened. For this reason he appears to have had no scruple in altering previous designations, as follows !-

- 1538, 1539. Murez Purpura alata, "Mart. Conch. Un. vol. ii. f. 66, Leaved Purpura
- foliata from N.W. coast of America."

 Murex Glomus cereus, seu Cereus conglomeratus, "Mart. vol. ii. f. 43, 1634 Ridged Buccinum tratum from King George's Sound."
 Vign. 21, f. A, B. Buccinum compositum, "Mart Un. Conch. vol. ii. f. 44; Plaited
- Buccinum from King George's Sound."
- Vign. 23, f. A, B. Trochus gibberosus Novæ Zelandiæ. "Forster's Cat. no. 1374; La Raboteuse de la nouvelle Zélande.—Mart. Un. Conch. vol. i. f. 31; Rugged Trochus inequalis from Friendly Is."
- 1579, 1580. Trochus doliarius, "Mart. vol. i. f. 32, Fluted Trochus canaliculatus from N. Zealand."
- 1681, 1582. Trochus virgineus, "Favanne, Conch. pl. 79. f. 1. vol. ii. p. 342; id. Cat. Rais. no. 1352, p. 269; Le Sabot Magellanique.—Mart. Un. Conch. vol. i. f. 33; Ringed Trochus annulatus from N. Zealand.—Cab. Mus. Portl. no. 1240; the Purpled-edged Trochus; item, no. 1970, a large and fine specimen of the Purple-edged Trochus from the N.W. coast of America; rare." [=T. celatus, var. β . Gmel., teste Dillw. vol. ii. p. 800.]
- 1802, 1803. Buccinum crispatum. "The furbelowed Whelk." [=B. plicatum,Mart., non Ln.]
- 1841, 1842. Murex amplustre. N.W. coast of America. [This erroneous locality is copied from the Portland Cat.. The species is quoted from Buccinum (Latirus) aplustre, Mart., no. 3. pl. 1. f. 3, where it is rightly assigned to the Friendly Is. =M. argus, var. γ . Gmel., teste Dillw. vol. ii. p. 735.]

The assignment of West American species to New Zealand, begun by Martyn, has continued a source of error to the present time. It occurs in Dr. Gould's 'Exploring Expedition Mollusca,' in the Cumingian Collection, and in the British Museum.

In the 'Travels in New Zealand,' by Ernest Dieffenbach, M.D., London 1843, vol. i. pp. 228-264, is given a "Catalogue of the Species of Mollusca and their Shells, which have hitherto been recorded as found at New Zealand," &c., by J. E. Gray. The author premises that some of the species [marked *]

assigned by the older writers may be found erroneously placed. The following are probably from the West coast of North America, with the synonymy as understood by Dr. Gray:-

Page 229 8. Murex foliatus, Gmel. 3329. = M. purfura alata, Chemn. x. pl. 169. f. 1538-9; Wood's Cat. f. 13. Purpura foliata, Mart. U. C. ii. 66.—Hub. N. Zealand, Humnhreys. King George's Sound, Martyn. ["= M. tripterus, Kien.: non M. tripterus, Born et auct. = trialatus, Kien." teste Hanl.]

9. Murex lyratus, G.nel. 3531. = M. glomus cereus, Chem. x. pl. 169. f. 1634. —Buccinum lyratum, Martyn, U. C. ii. f. 43.—Hub. N. Zealand, King 229

George's Bay, Martyn.

43. Purpura lamellosa, = Buccinum 1., Gmel., Wood's Cat. f. 60. = Buc. pli-233 catum, Martyn, U. C. ii. f. 41. = Buc. compositum, Chemn. x. 179, vign. 21. f. A, B. = Buc. criepatum, Chemn. xi. 84, pl. 187. f. 1802-3. Murez cr., Lam. 174.—Hab. N. Zealand, King George's Sound, Chemn., Martyn. Coast of Columbia.

•71. Ziziphinus canaliculatus. Trochus c., Martyn, U. C. pl. 32, = Tr. doliarius, Chemn. x. f. 1579-80; Wood's Cat. f. 96.—Hab. N. Zealand, Martyn.

California, Capt. Belcher, R.N.

*72. Ziziphanus annulatus. Trochus a., Martyn, U. C. pl. 33. = T. virgineus, Chemn. x. f. 1581-2; Wood's Cat. f. 98. = Tr. cælatus, β., Gmel.—Hab. N. Zealand, Martyn. California, Capt. Belcher.

243 113. Bulla Quoyii, Gray, n. s. = B. striata, Q. & G., Voy. Astr. ii. 354, pl. 26, f. 8, 9, non Lam.—Hab. N. Zealand, Quoy, Stanger.

But the first authentic information on the molluscs of the North-western coast is given in the 'Voyage Round the World, but more particularly to the N.W. Coast of America,' by Capt. George Dixon, London, 1789: to which is added a Natural History Appendix.

Page 355, fig. 2. Solen patulus . Cook's River. [= Machæra Nuttalli, Conr.]

In the 'Conchology, or Natural History of Shells,' by George Perry, London, 1811, a work of no little pretension, yet singularly inaccurate, are figured the following species, but without authorities for the assigned localities:-

* As this extract is probably the first description on record of molluses from the Pacific shores of N. America, by the original collector, and as the book is rarely to be met with,

it may be interesting to quote the passage:—
"At the mouth of Cook's River [lat. 59°-61°] are many species of shell-fish, most of them. I presume, nondescript; and of all which I should have endeavoured to have got specimens, had business permitted. Among the bivalves we noticed some of a large species, of the Cardism or cockle-genus [Cardism corbis, Mart.], half-a-dozen of which would have afforded a good supper for one person; but, for a repast of that kind, our men pre-ferred a large species of the Soles genus, which they got in quantity, and were easily discovered by their spouting up the water as the men walked over the sands where they in-habited: as I suppose it to be a new kind, I have given a figure of it in the annexed plate [Solen patulus; accurate external and internal views, size of life]. 'Tis a thin brittle shell, smooth within and without: one valve is furnished with two front and two lateral teeth [the 'laterals' are the nymphse for the ligament]; the other has one front and one side tooth, which slip in between the others in the opposite valve: from the teeth, in each valve, proceeds a strong rib, which extends to above halfway across the shell, and gradually loses itself towards the edge, which is smooth and sharp. The colour of the outside is white, circularly, but faintly, zoned with violet, and is covered with a smooth yellowish-brown epidermis, which appears darkest where the zones are: the inside is white, slightly zoned, and tinted with violet and pink. The animal, as in all species of this genus, protrudes beyond the ends of the shell very much, and is exceeding good food.—A fine specimen of this kind is in the Collection of John Swainson, Esq., of the Custom House, London.—We saw also, on this coast, a kind of muscle, in colour and shape much like the common eatable muscle of Europe, but differed in being circularly wrinkled, and a great deal larger [Mytilus Californianus, Conr.]. One valve I saw at Queen Charlotte's Islands measured above nine inches and a half in length.—With pieces of these muscles, sharpened to an exquisite edge and point, the Indians head their harpoons and other instruments for fishing They fasten them on with a kind of resinous substance."—Diron's 'Voyage.'

Fig.
4. Polyplex gracilis [= Trophon multicostatus, Esch.]. N. Zealand.
5. Melania striata. New California. [All the figures of 'Melania' on this plate represent large Bulimi, perhaps from S. America.]
4. Cerithium reticulatum. New California.
2. Haustrum pictum [= Purpura planospira]. East Indies.
3. Haustrum dentex [= P. columellaris]. Nootka Sound: only 2 sp. known.
4. Haustrum tuberculatum [= P. patula, jun.]. ?—
Quina Loreriana [= O. porphyria]. ?—

35

44

Oliva Leveriana [= O. porphyria]. P—
 Trochus decarinatus [= Calliostoma canaliculatum]. N. Zealand.
 Venus radiata [= Callista lupinaria]. N. Zealand.

The common Californian Haliotis was, it seems, first described in the Zoological Miscellany, by Dr. W. E. Leach, vol. i. 1814.

Page 131, pl. 58. Haliotis Cracherodii, Leach. California.

Solander made use of the materials he had collected in Cook's Voyage, in compiling a work on Conchology of considerable merit. Dillwyn made a copy of it, and used it in preparing his own, allowing priority to its specific names; but it was never published. The types were lately parted-with by the Linnean Society, who had determined not to keep any collections except those of Linnæus. The 'Descriptive Catalogue of Recent Shells,' &c., by L. W. Dillwyn: London, 1817, is considered by Dr. Gray to be the best conchological work arranged according to the old system. The following are quoted from the West Coast:-

Vol. Page.
i. 301. Mytilus frons, Linn. = Ostrea frons, Sol. Callone. Acapulco, Humphreys;
West Indies, auct.

469. Cypræa pustulata, Sol. Acapulco.

617. Buccinum plumbeum, Chemn. California. [Monoceros, PS. America.]

Following Dillwyn, and nearly eclipsing his fame through the originality and excellence of his classification, appeared Lamarck's 'Animaux sans Vertèbres,' 1818-1822. Coordinate with or preceding this work are his Articles in the 'Annales du Muséum' and the 'Encyclopédie.' The fresh sources of his information are quoted in the first Report, p. 169.

In Delessert's 'Recueil,' 1841, are figured

Pl. 2, fig. 1. Solen ambiguus, Lam. [=S. rudis, C. B. Ad.] "Les mers d'Amérique." Pl. 19, fig. 2. Cytherea semilamellosa, Gaudichaud [= C. lupinaria]. China Seas.

In Deshayes' invaluable edition of the 'An. s. Vert.,' Paris, 1835-45, are quoted a variety of West Coast species which have already appeared under their original authorities. The following may be added:

viii. 232. Bulimus Mexicanus, Lam. = Helix vittata, Fér. Mexico.

33. Haliotis Californiensis, Swains. = H. glabra, Desh. California. ix.

ix.

357. Pleurotoma tuberculifera, Br. & Sby. California.
584. Murex radix, Gmel. = M. melanomathos (pars), Dillw. Acapulco.

605. Murex foliatus, Gmel. = M. tripterus, Kien. N.W. America. "? India."

The last of the early writers whose works should here be quoted, and whose ideas on the relations of genera were considerably in advance of the age, though somewhat fanciful, is Swainson, in his 'Zoological Illustratious,' 1820-1833; 'Appendix to the Sale Catalogue of Mrs. Bligh's Shells,' 1822; and 'Exotic Conchology, 1821-1835, reissued by Hanley, 1841. These works contain the following West Coast species:-

^{*} This work has been translated into French, and republished, by Chenu; where the same species is found on page 8, pl. 8. f. 2.

```
Bligh Cat. Page.

2. Habiotis rufescens, Swains. (Ditto in Exot. Conch. ed. ii. p. 34.) Galapagos [?]
       . Cassis [Malea] ringens, Swains. ?-
    5. Cassis corrugata, Swains. Native of the Galapagos. 5. Harpa crenata, Swains.
    8. Strombus granulatus, Swains. ?-
Exot. Conch. Plate.
  86. Conus princepe, Ln. = C. regius, Martini, Lam. (C. P. var. 8., Ln. = C. ebræu.)
            Asiatic Ocean.
  97 (middle figure). Marginella prunum, Gmel., Martini = Voluta plumbea, Sol. MS.
Africa. [The pinched W. Indian form.]
182. Cypræa spadicea, Swains., Tilloch's Phil. Mag. vol. lxi. p. 376. South Seas
            (Mawe).

    Haliotsi Californiensis, Swains. [Figured with 9 small holes.] 1821.
    Solen ambiguus, Lam. N. America, 1820. [This shell is conspecific with the "S. medius, Alashka," of the B. M. Coll.; differing somewhat from the S.

            ambiguus as figured by Delessert. The B. M. locality is perhaps erroneous.]
    24. Valenciennes' Memoir on Humb. and Bonpl., 1833.—The following
notes are from a study of the complete copy in the Libr. Roy. Coll. Surgeons.
Page.
221. Donax radiata [=var. of D. punctatostriatus, Hanl. 1848].
219. Venus succincta [= Chione Californiensis, Brod. 1835].
245. Bulimus undatus. [The Caribbean, not the Mexican, type is here figured.]
267. Haliotis Californiana [= H. rufescens, Swains., not H. Californiensis, Swains.].
267. (Add) Haliotis interrupta, Val. Tropical America. [The description accords—ith the roung of H. Cracherodii. Leach.]
            with the young of H. Cracherodii, Leach.
277. Cerithium musica. [Description accords with C. maculosum, Kien.] 278. Cerithium granosum [= Cerithidea varicosa].
279. Cerithium fragaria [= Rhinoclavis gemmata, Hds.].
282. Cerithium varicosum [ = Cerithidea varicosa, Sby.].
308. Strombus cancellatus.
                                          Closely resembles Rostellaria fissurella, from Grignon.
            [Probably E. Indian.]
838. Conus scalaris [= C. gradatus (Mawe), Wood's Suppl.].
270. Solarium bicanaliculatum. Small species, like S. Herberti, Desh. Enc.
265. Natica Bonplandi. [The figure exactly represents Neverita patula, Sby.]
266. (Add) Natica uber, Val. Cumana.
317. Purpura semi-imbricata, Lam. [An. s. Vert. vol. x. p. 84, no. 39; not since identified from the brief description. Perhaps = Cuma costata, Blainv.]
287. Fusus turris [=F. Dupetithouarsii, Kien.].
290. Fusus Magellanicus " = Buc. Gevermanum, Pallas, = Murex Peruvianus, Enc.
            Méth.'
295. Ficula ficoides [? = decussata]
296. Pyrula spirata [? = Rapa, jun.].
```

25. Coquille.—All the limpets quoted are South American.

26. Eschecholtz.—The following observations may be useful to the student:

10. Murex ferrugineus [= Purp. crispata, Chemn., var.; varices few, scarcely frilled].

11. Murex lactuca [= Purpura crispata, Chemn.].

11. Murez multicostatus [is not Trophon clathratus, as supposed by Midd.; but probably = T. Gunneri. It resembles T. laciniatum, Mart. (Falkland Is.) on a small scale; varices coronated, without spiral sculpture]

16. Acmea. [Genus described in the Appendix to Kotzebue's Second Voyage, 1830.

p. 350; somewhat before Tectura, teste Woodward.]

18. Acmea manillata. [The 'crowded tubercles' were perhaps due to nullipore.]

19. Acmea cassis [if a northern shell, is perhaps the strongly ribbed var. of pella; but the figure accords best with the Cape Horn species, P. ænea, Mart.].

20. Acmon digitalis [is perhaps distinct from the variable persona; but passes into it by easy transitions].

- Paga.
 21. Fissurella aspera [= Ghyphis Lincolni, Gray, = cratitia, Gld. But Gl. densiclathrata, Rve, is probably distinct; Sta Barbara, Jewett, Cooper].
- 27. Tankerville Cat., 1825.—The following species are also from the West Coast. The prices are added from the British Museum copy, as a record of

	former rarity :-	-		
No. 70	App. page. Price. 10a	. Solen ambiguus.		
161		. Tellina operculata.		
102		. Tellina punicea.		
206		Lucina Childreni [described by Gray in Ann. Phil. 1824; v. also		
, 200		Zool. Journ. vol. i. 1825, pp. 221-2. There is no authority for the statement that it came from Brazil. The Br. Mus. specimens are from "Mus. Cracherode," and are probably West Coast. The only known locality is Cape St. Lucas.]		
1293	30 s	. Trochus annulatus.		
1294	20s	. Trochus doliarius.		
1690	10s	. Murex crispatus.		
1842	15s	. Purpura patula.		
1855	20	. Purpura planospir u.		
1896	4 5s	. Harpa crenata.		
2240		. Cypræa spadicea.		
2251		. Cypræa albugino sa.		
2330	xxxii 15s	. Oliva splendidula. Hab.?—		
2332		. Oliva biplicata. West Coast North America.		
2333		. Oliva columellaris. ?—		
2347	£5 5s	. Conus regius.		
The		4, should have been omitted, except at no. 808, p. vi. No.		
1401 is described, on p. xii. as from Newfoundland. No. 1786 should have up				

1401 is described, on p. xii, as from Newfoundland. No. 1786 should have no page-reference.

In the 'Zoological Journal,' London, 1824-1829, appear descriptions of the following species:-

37 -1 :	March 1824,	60. Natica patula, Sby. "Brought from S. America by
V 01. 1.	March 1024,	M. de Humboldt. 2 specimens only known."
"	Oct. 1824,	369. Cypræa subrostrata, Gray. Nehoue (Mus. Sby.).
		['Probably fossil' (Gray): a white, smooth species, not to be confounded with Trivia subro trada.]
n	Jan. 1825,	510. Cypræa albuginosa, Mawe, pl. 7. f. 2; pl. 12. f. 2. Cali-
		fornia. Named, without description, in Mawe's
		Cat. (= C. poraria, var., Ducl.: Z. J. iv. p. 68.) 513. Cypræa pustulata, Sol. S. Coast of Mexico. China.
Vol. iii. Jan. 1827,		70. Hinnites giganteus (Sby.). ?—[= H. Poulsoni, Conr.
		Calif. = Hinnita gigantea, Gray, Ann. Phil. Aug.

1826. = Lima gigantea, Id. in loc. cit. [non J. Sby.] 363. Cypræa subrostrata, Gray [bis, Trivia]. ?—
364. Cypræa radians, Lam. = C. oniscus, Dillw. = C. pediculus, β., Gmel. + C. costata, Dillw. W. Coast of Mexico, ? Adriatic. Sept. 1827,

365. Cypræa Californiana, Gray [Trivia]. California. 145-162. Monograph of Ovulum, by G. B. Sowerby, containing Vol. iv. Jan. 1828,

- the species afterwards figured in the Spec. Conch. 28. Beechey's Voyage.—Increased study has supplied the following corrections :-
- * At p. 511, note *, Dr. Gray states that the Natica patula, Barnes, Ann. Lyc. Nat. Hist. N. Y., Sept. 1824, i. 183, is "the shell described under that name by Sby. As there is another N. patula [? ubi], must be called by Mr. Barnes's MS. name of N. helicoides.' Also that Dolium dentatum, Barnes, loc. cit. = D. ringens, Sby.

Z. J. 372. Natica pallida [= Lunatia caurina, Gld., + soluta, Gld.].
372. Natica otis. [Var. = Polinices fusca, Cpr.]
372. Natica clausa [= N. Beverlii, Leach, MS. in B. M.].

272. Eliza lanilusa Rus subcadratum. Gray. [Resembles

- 378. Fusus lapillus Buc. subrostratum, Gray. [Resembles the smooth, stumpy form of Purpura plicata, Mart.: "perfectly distinct, teste Hanl.]
- 379. Conus arcuatus [as figured in Z. B. V., is a very different shell from that in Mus. Cum. and the monographs; the latter is allied to C. tornatus].

379. Conus interruptus [resembles the broad form of C. mahogani].

Z. B. V. 130. (Add) Oliva semistriata, Gray, pl. 36. f. 10. Hab. ?— [Panama, &c.]

119. Conus Ximenes [scarcely differs from C. mahogani, var. in Mus. Cum.].

132. [Should be] Agaronia [et passim].

147. (Add) Mouretia Personana, Sby. (P. Z. S. 1835, p. 0) pl. 39. f. 6, 6'.

- [Also Margarita Bay, teste Pease.]

 148. Patella Muzatlandica. [This is the Sandwich Islands species, = P. exarata, Nutt., teste Hanl. The large specimens quoted are probably P. talcosa, Gid.]
- 150. Chama echinata. [Further series of specimens make it doubtful whether this be not a distinct species from C. frondosa, var. The original sculpture has not yet been detected.]

151. [Should be] Cytherea biradiata.
152. (Add) Cardita borealis, Conr. (="Arcturus rudis, Humphr.") pl. 44.
f. 1. [Probably from near lcy Cape. Mus. Belcher.]

The types of the species described from this important voyage have been scattered. Some have been identified from Admiral Sir E. Belcher's Collection, which he kindly allowed me to examine for that purpose; others are in the possession of Mr. Hanley; but many appear hopelessly lost.

- 29. Wood's Ind. Test.—In Hanley's Revised Edition of this important work (London, 1856), several new localities are added from the writer's varied experience, and the synonymy is most carefully elaborated. No other book contains such a mass of trustworthy information on the old species in so small a compass. The following are quoted, either as original authorities, or for locality or synonymy:-
 - Page. Fig. 2 10. Chiton tunicatus, Wood, Gen. Conch. 1815, pl. 2. f. 1 [= Katherina
 - Douglasia, Gray]. Sitka.

 8 18. Chilon lineatus, Wood, Gen. Conch. 1815, pl. 2. f. 4, 5. Sitcha, North Calif. [Mr. Hanley believes that Sitka is the island in lat. 58°, and that Sitcha is in the district now known as Washington Territory, olim Oregon.]

 20. Chiton sulcatus, Wood, Gen. Conch. 1815, pl. 3. f. 1. Galapagos.

 16. Solen maximus, Wood, Gen. Conch. 1815, pl. 31. f. 3 [= S. patulus, Dixon. N.W. America]. Sandw. Is.

 - 19
 - 8. Tellina rugosa, Born. Is. of Opara, New California. [Pacific Is.] 21

- Tellina muricata, Chemn. = Lucina scabra, Rve. Mexico.
 Conus pusillus, Wood: non Chemn. nec Lam. [nec Gld.] = C. puncticulatus, var., Lam. (quasi Brug.) Mexico.
 Cypræa onyx, Gray (quasi Lin.) = C. adusta, Chemn. [Pacific Is. The San Diegan shell is closely allied, = Luponia spadicea.] 'Calif.'
- 35. Voluta incrassata, Dillw.; posterior to O. angulata, Lam. Centr. Am. 14. Haliotis Cracherodii, Leach = H. glabra, Schub. 1829, non Chenin. 183
- et auct. Calif. Suppl. 201 3. Iellina lutea, Gray = T. alternidentata, Br. & Sby. = T. Guilfordia.
 - Gray, in Griff. Cuv. pl. 19. f. 2. Icy Cape.

 1. Donax scalpellum, Gray, Ann. Phil. 1825, ix. 106; = D. elongata
 Mawe, Conch. pl. 9. f. 6, 1823. Calif. 202

 Pig.
 Donar stultorum, Mawe, l. c. pl. 9. f. 7; = Trigona st., Gray, Analyst, 1838. P.S. America [= Tr. crassatelloides, jun. Calif.].
 Chama crassicostata = Venericardia c., Sby., Tank. Cat. p. 4. = Cardita Cuvieri, Brod., P. Z. S. 1832. = C. Michelini, Val. Acapulco. Suppl. 202 204 205 11. Arca pectiniformis, Gray (Pectunculus), non Lam. = P. inæqualis, Sby. 208 6. Conus gradatus, Mawe. Calif. $[=\acute{C}$. scalaris, Val. Pan. 211 25. Voluta lens, Mawe. Pan. 211 26. Voluta harpa, Mawe, Conch. Front. f. 2. 1823; = V. nucleus, Lam. S. Pacific. 83. Voluta nux, B.M. = Oliva biplicata, Sby., Tank. Cat. Calif. 38. Voluta tenebrosa, Mawe = O. undatella, Ducl. (Lam.) Pan. 211 212 212 4. Buccinum tenue, Mawe = Cassis Massenæ, Kien. Galapagos. 212 7. Buccinum distortum, Swains., Bligh's Cat. = Columbella triumphalis,
Ducl. [Clavella]. W. Columbia. 10. Buccinum brevidentatum, Mawe = Purp. cornigera, Blainv. = P. ocel-213 lata, Kien. W. Columbia. 11. Buccinum denticulatum, Mawe = Monoceros lugubre, Sby. Gen.
12. Buccinum armatum, Mawe Calif. 213 213 Buccinum tectum, Mawe = Purp. callosa, Sby. Gen., non Lam. = P. angulifera, Kien. (Ducl.) = Cuma sulcata, Swains. Mal. Pan.
 Buccinum planaxis, Mawe = Pl. planicosta, Sby. = P. canaliculata, Duval, Rev. Zool. 1840, p. 107. Pan. [Purp. canaliculata, Ducl., 213 is quite distinct.] 25. Buccinum elongatum, Mawe = Terebra strigata, Shy., Tank. Cat. == T. zebra, Kien. Pan. Strombus bituberculatus, B.M., non auct. = Str. Peruvianus, Swains., Phil. Mag. 62. W. Columb. 215 3. Murex rigidus, B.M. = Buc. nodatum, Martyn = Murex n., Gmel., 216 Dillw. = Turbinella rigida, Gray. Pan. [Probably the Pacific sp.] 217 10. Murex sanguineus, Mawe = Turbinella varicosa, Rve. Galapagos 217 14. Murex salmo, Mawe = Fasciolaria granosa, Kien., as of Brod., P.Z.S. 1832. Panama. Trochus undosus, Wood = T. undatus, Mawe, Conch. no. 146 (not described); = T. balænarum, Val. Calif.
 Trochus pellis-serpentis, Mawe = Tegula elegans, Less., Ill. Zool. pl. 50; 218 219 = Tr. strigilatus, Phil. (quasi Anton) Abbild. pl. 2. f. 9. Pan. 45. Turbo saxosus, Mawe = Marmorostoma undulata, Swains., Zool. Ill. 225 s. 2. Pan. 233 6. Haliotis corrugata, Mawe, Conch. no. 181. ?= H. nodosa, Phil. Abbil. pl. 2. Calif. 3. Patella peziza, Gray = Dispotea Byronensis, Gray, Enc. Metr. Moll. pl. 4. f. 4 = [? Crucibulum spinosum, var.]. Chili. 233

- 31. Voy. Beagle.—The Triton scaber is rightly assigned to S. America: there is no satisfactory evidence for its appearance on the N.W. coast. The shells so quoted are probably either imported from the Magellan district, or are Priene Oregonensis, jun., or Ocinebra, var. aspera.
- 36. Duclos.—The original article is in the 'Annales Nat. Sc.,' May 1832, and contains the following species:-
- Page. Plate. Fig. 1. Purpura canaliculata, Ducl., resembles P. succincta on a small scale.
 Cal.; very rare. [Figured with 10 principal and a few intercalary ribs. = P. decemcostata, Midd.]
 2. Purpura melones, Ducl. ?—[Panama.]
 3. Purpura centiquadra, Val. MS. [Ducl. states that Val. altered his own name to speciosa while the sheet was passing through the 104
- 105
- 109 press. The latter, however, bears date 1833.]
- 111 10. Purpura sphæridia, Ducl. Cal. [A well-known Sistrum from the Pacific Is.

The species quoted in the text from Guérin, which appear in the Mag. Zool. for 1844, also appear here with the early date. Oliva polpaster, a southern form, from Guayaquil, &c., is distinct from all varieties of the Gulf species, O. Cumingii; it bears date 1839. In the same vol. are described and figured—

Plate.
2. Calyptræa (Calypeopeis) rugosa, Less. Payta, Peru. [= Cruc. imbricatum, without pits.

23. Conus hieroglyphus, Ducl. Probably Cal. [A Pacific form, like C. abbreciatus.

27. Cyprae eglantina, Ducl. Cal. [A starved var. of Aricia arabica, Pacific Is.]

38. Lady Douglas (afterwards known as Lady Wigram).—Placunanomia

espio. [The type is an old shell, with faint ribs.]

Placunanomia alope. [The type is a young shell, with small scars and faint ribs. The large series of specimens examined in the Smithsonian collections proves that these forms are among the many varieties of P. macroschisma. The Indians have a superstitious dread of handling it. Many more species have since been detected in the Brit. Mus., from the late Lady Wigram's valuable donations, including Macoma inquinata, Desh., described from her specimens; but, as they are evidently from mixed localities, it has not been thought necessary to catalogue them.]

39. Nuttall.—The verification of Conrad's species being of considerable importance, I made diligent search for the original types during a recent tour in the United States. The supposed collection at Harvard University, Cambridge, Mass., has not been discovered by Professor Agassiz. inquiries which Professor Longfellow kindly made at my request resulted in information that it was "in Dr. Wyman's Mus. Nat. Hist., in the granite building on Howard Street;" but no opportunity has been afforded of collating it, or even of verifying its existence. Dr. Jay rendered me every assistance in studying the types which he has catalogued in his collection, now rearranging in his residence at Memironeck, near New York, and gave such duplicates as could be spared for the Smithsonian Museum. Several species, however, were not to be found, and some were clearly erroneous, as e. g. Chama "exogyra, Conr.," which proved to be C. lobata, Brod.; W. I., teste Cuming; China, Brit. Mus. The most satisfactory information was derived from an interview with Mr. Conrad himself at the Acad. Nat. Sci., Philadelphia, where the honorary curator, Mr. W. G. Binney, afforded us all possible aid in eliminating types from the collections of the Academy and of private conchologists in the city. Mr. Nuttall's death (the news of which was received soon after) prevented his revising the corrections thus obtained. As he had previously presented a duplicate series of his shells to the Brit. Mus., which had been incorporated with the general collection, and had signified to me his intention to leave the unique specimens to the nation, I at once communicated with the survivors and with Dr. Gray, who was fortunate. crough to stop the intended sale, and to secure the shells, which were kindly presented by the executors. They are now mounted, and kept in drawers adjoining the Reigen collection, the Vancouver collection, and the Stimpsonian typical collection of East Coast N. American shells. The following is a résumé of corrections obtained from these different sources, numbered to correspond with the list, Rep. pp. 194-201:-

2. "Parapholas" penita [is a Pholadidea].

Patyodon cancellatus [= Cryptodonta myoides, Nutt. MS.].
 Cryptodon Nuttallii, Conr. [The author, finding the generic name preoccupied changed it to Schizothærus N.: 1852, teste Bin. Bibl.; 1854, Journ. A. N. S. Phil. p. 199. = Lutraria capaz, Gld. = L. maximu, Midd., = Tresus maximus,

Gray. Mr. Nuttall only brought home young specimens of this extraordinary shell. In its adult state it assumes either a transverse form (=capax) or the elongated condition, redescribed in a fossil state as new. these there is every gradation, as can be traced in the magnificent series in the Smiths. Mus.; and a caskful of the animals in spirits, of various ages,

the Smiths. Mus.; and a caskful of the animals in spirits, of various ages, has affiliated the large shells to the original Nuttallian specimens.]

10. Pandora punctata [is a Clidiophora. The series so named in the Nuttallian collection belongs, however, to the Atlantic Cl. trilineata].

11. Solecurtus lucidus [is almost certainly the young of no. 12. The amount of obliquity in the internal rib is extremely variable in the adult specimens].

12. Solecurtus Nuttallii [=Machara patula, Dixon,=Aulus grandis, Gmel., teste Hds. in Mus. Cum. Mr. C.'s "grandis, var.," from Monterey, suits in its proportions for the adult of S. lucidus. The shell has been widely distributed by commerce, and appears to extend far in a northerly direction. The animal is very beautifully fringed].

14. Solecurtus Californianus [=S. Dombeyi, teste Mus. Cuming: non Hanl. MS.].

14. Solecurtus Californianus [= S. Dombeyi, teste Mus. Cuming: non Hanl. MS.].

 Psammobia Pacifica [is a Heterodonax, probably identical with the W. Indian H. bimaculata, which is found abundantly in its many varieties at Acapulco; = Tellina vicina, C. B. Ad.].

Sanguinolaria Californiana [= Macoma inconspicua, Brod. & Sby., and is a northern species].

18. Sanguinolaria rubroradiata [is the young of a large species of Psammobia].
22. Tellina alta [= (from types) ? Scrobicularia biangulata, Cpr.].
23. [= Macoma edulis, Nutt.; a northern variety of M. secta, no. 25, and quite

distinct from M. edentula.

26. The locality is not confirmed, and is probably erroneous. 27. [Dr. Gould considers his D. obesus a distinct species; from a large series, it

appears identical. 28, 29. These species of Standella, described from young specimens, were tound

of very large size by Dr. Cooper, with what may prove a third species, perhaps S. nasuta, Gld., olim.]

30b. Petricola carditoides [with P. arcuata+cylindracea, Desh., are varieties of P. Californica. The series preserved in the Smithsonian Museum connects all the extreme forms

Mysia tumida, Conr. MS. [= Diplodonta orbella, Gld., and belongs to the section Sphærella, Conr. The label had been assigned by accident to a young valve

of a Chione, probably from the Sandwich Is.].

33. Tapes staminea. [This is the extreme southern form of a widely diffused and very variable species, of which the normal condition is Saxidomus Petitii, Desh., = Venus rigida, Gld. pars. The principal varieties have been named Tapes diversa, Sby. = Venus mundulus, Rve., and Venus ruderata, Desh.]

34. [The Californian Saxidomi divide themselves into three groups: the large, southern, oval, grooved shells = S. aratus, Gld.; the subquadrate, comparatively smooth, northern shells = S. squalidus + giganteus, Desh.; and an intermediate form, which is the true S. Nuttallii, Conr. Some of Mr. Nuttallia considerations. tall's specimens were, however, the young of S. aratus, of which the adult

was not known till very recently.]
35. [The young of this Pachydesma is "Trigona stultorum, Gray," Desh. MS. in British Museum.]

Cytherea callosa [= C. nobilis, Rve. It is not a Dosinia, but the type of a new subgenus, Amiantis, differing from Callista as Mercenaria does from Venus].

87. Plate 19, fig. 16 (not 14 nor 15). [The true Venus Nuttalki of Conr. (teste Conr. ips. and types in Mus. Phil. Ac. and Jay) is not the shell here catalogued, which generally goes by that name, but is a synonym for the V. Californiensis, Brod., = succincta, Val. The error was corrected in the Mus. Cum. in time for the right shell to be figured by Reeve in his recent monograph. It is doubtful what name Conrad intended for the shell here catalogued, which belongs to the group of Statchburyi, factifraga, &c. If really distinct from the latter, it may stand as Chione callosa, Sby. jun. (non Conr.)]

88. Venus Californiana [(teste Conr. ips.) was intended for V. Californianas, Bard Not hours assessed by the control of t

Brod. Not having access to the type, it could hardly be recognized by the

brief diagnosis. The name should therefore be dropped. The shell, pl. 19, fig. 15 (not 16)=Chione simillima, Sby., no. 39; a good Lower Californian species. It seems that the error was not in numbering of the figures, as Mr. Nuttall supposed, but in Conrad's identification of Broderip's species].

40. Chione excreta [is closely related to Ch. succincta; the unique type, however, in Brit. Mus. displays characteristic differences of sculpture. It is singu-

11. But. Mus. displays characteristic differences of sculpture. It is singularly like the W. Indian Ch. cuncellata, and may prove exotic].
41. Cypricardia Californica [= C. Guiniaca, Lam.,= C. Duperryi, Desh. Almost certainly from the Sandwich Is.].
45. 45b. Cardium Culifornianum [= C. Nuttallii, var. The species is named "C. corbis, Mart.," by Desh. MS. in Mus. Brit. and Cuming].
46. Cardium quadragena ium [= C. luteolabrum, Gld.].

- 51. v. anteà, no: 32.
- 56. Modiola recta. [Described from very young specimens. The broad form is
- M. Asbellata, Gld.]

 10. Mythus bifurcatus. [The type is lost; the figure and description would suit many species. It is allocated, in Mus. Cum., to the Californian Septifer; but by Pease to a Sandwich Island Mythus.]

CO. [None of Conrad's species of Isogn mon have been confirmed as from Califor-

nis. They are known to inhabit the Pacific Islands.]

62b. [Mr. Nuttall also brought an oyster, which he named in MS. O. latecaudata,

= O. lurida, var.; and Hinnites giganteus, Gray, = H. Poulsoni, Conr.]

64. [Dr. Gould states that H. Nicklingua, Lea, = H. Californiensis, Pfr., Chemn.,

Rve.; but that H. Californiensi., Lea, is distinct.]

69. Helix Townsendiana [= H. æruginosa, Gld. MS.].

74. Chiton Nuttallii [is an Ischnochiton]

- 75. Chilon acutus [is an aberrant form of Mopalia. "Chilon consimilis," Nutt. MS. in Brit. Mus., appears to be Mopalia Hindsii, var. "Chilon Californicus" Nutt. MS., = "Acanthopleura" scabra, Rve.].

- Patella mamillata, Nutt. [(non Esch.) is now assigned in Mus. Cuming to Acmea scabra, Nutt., var. limatula].
 Fissurella ornata, Nutt. [= F. volcano, Rve.].
 Glyphis den iclathrata, Rve. [V. anteà, p. 522. The shell has been lost.]
 H. Cali, orniensis, Swains. [(not Californiana, Val., = rufescens), is an extreme var. of H. Cracherodis. The series in the Smithsonian Mus. have 6, 6, 7, 9, and O helecuse cooperations in the Californiana. 8, and 9 holes; as soon as it has 10 and 11, it passes into Californiensis, which was figured in 1821 with 9 holes. When these are numerous, they

are generally small in proportion].

91. Calliostoma doliarium [= C. canaliculatum, Mart. This and C. annulatum,

Mart., are quite distinct from C. filosum, which = C. costatum, Mart.].

92. Omphalius ater [is the S. American species. The common Californian shell is]

94. O. marginatus, Nutt. MS. [= funebralis, A. Ad.].

97b. The collection contains one specimen of Crepidula dorsata.

- 103. [Is a Serpulorbis, without operc., teste Cooper.]
 106. Litorina tenebrata [should be patula, Gld. (non Jeffr.). Nuttall's MS. name was published by Phil. in 1845].
- [The varietal name must be dropped. 107. Natica? maroccana, var. Californica. The shell certainly came from the Sandwich Islands.]

108. [The shell is Vitularia salebrosa, jun., and not] Ranella triquetra.

109. Mitra maura [Swain., teste Rve. (Pubi)=M. orientalis, Gray, =M. "Chilensis," Kien.].

110. Olivella glandinaria, Nutt. [= O. biplicata, Sby.].

- 112, 113. Purpura aperta and P. harpa [are certainly from the Sandwich Islands], 114. Purpura emarginata [was described by Desh. from an immature specimen in which a half-formed knob caused an "emargination." The adult is one
- very extreme form; P. ostrina, Gld., is another; P. fuscata, Fbs., is a third. The normal condition is P. lapillus, Cooper (non Linn.), = saxicola, Val. Mr. Nuttall's collection also contains] P. crispata, var.

116. Monoceros brevidens [is an accidentally short-toothed form of M. lapilloides]. 118. Cerostoma Nuttallii [with C. foliatum and C. monoceros, Sby., belongs to Parpurida.

The specimens numbered 2, 5, 8, 9, 19, 21, 28-31, 36, 44, 46, 49, 50, 52-54, 50, 59, 64-67, 70-72, 76, 84, 86-88, 98, 101, 103, 104, and 109 do not appear in the Brit. Mus. Nuttallian collection.

41. Voy. Venus.—Rev. Zool. and Guér. Mag.

Arca trapezia [=A. tuberculosa]

Saxicava legumen [= 8. pholadis; from hole of Lithophagus].
Petricola arcuata [= the normal state of P. carditoides, Conr.]

Petricola cylindracea [=a short form of the same sp., developing ridges of growth, like Tapes ruderata, Desh.].

Venerupis gigantea [= Saxidomus squalidus, Desh.].

Cypricardia Duperreyi [= C. Guinaiaca, Lam., = C. Californica, Conr. A Sandwich

Island species, twice quoted, but not confirmed, from Cal.].

Cardium Laperoussii [is an Aphrodite, like Grænlandicum, but more transverse, and with lateral teeth less developed. This very rare and probably boreal shell has just been identified from Adm. Sir E. Belcher's coll.].

Cardium Californiense, Desh. [is not C. Californianum (= Nuttallii), Conr.; but = C. pseudofossile, Rve., 1844. The name of Desh. is unfortunate, as his shell is the Kamtschatkan form with strong ribs. The Californian form is smaller, with fainter ribs, = C. blandum, Gld.].

Purpura Freycinetii [is figured from a very extreme form of the Japanese species.

P. ostrina passes into similar varieties].

Veludina Mülleri [probably = V. lævigata, which reaches Vancouver].

Lucina cristata [= Tellidora lunulata, Holmes; described from the Pleistocene of S. Carolina, and lately dredged alive by Dr. Stimpson; not T. Burnets].

The following may be added to Deshayes' list:

Pl. 81. Tellina ligamentina, Desh., 1843. Hab. ?— [= Macoma secta, Conr.] Tellina Japonica, Desh., in Mus. Cum. [also appears to be M. secta, jun.].

In Valenciennes' plates to the Voy. Ven. have been recognized the following West Coast species and synonyms, in addition to those quoted in Rep. pp. 203-204:-

Plate. Fig. 3 2. Trochus diadematus, Val. [resembles Pomaulax undosus, jun., but the surface is faintly wrinkled all over; umbilical region not chiseled; and

face is faintly wrinkled all over; umbilical region not chiseled; and operc. not ridged. It is probably intended for Pachypoma gibberosum].

1. Trochus rubiginosus, Val. [probably = T. annulatus, Mart.].

2. Trochus pellucidus, Val. [resembles T. lima, Panama].

3. Buccinum Prevostii, Val. [probably = Pisaniu pagodus].

1. Purpura bufonides, Val. [appears one of the many vars. of P. biserialis].

1. Purpura rupestris, Val. [probably = Monoceros lugubre, jun.].

1. Murex aciculiger, Val. [is represented with labral tooth and closed canal; but resembles C. festivus, Hds.].

2. Murer tortum (Brod.). Val. [resembles Ph. princens, with a very poor 10

3. Murex tortuus (Brod.), Val. [resembles Ph. princeps, with a very poor operc., badly drawn].

operc., badly drawn].

1. Venus Thouarsii, Val. [?=multicostata, Sby.; figured with very broad, smooth, close ribs, scarcely indented, except in the middle].

3. Venus pectunculoides, Val. [is probably T. grata, not histrionica].

2. Cardium subelongatum (Rve.), Val. [appears=C. procerum, jun.].

2. Pecten comatus, Val. (may be=hastatus, jun.; but, although figured with out the red spot, it most resembles Him. giganteus, jun.].

1. Pecten excavatus, Val. [=Janira dentata, Sby.].

3. , pomatia, Val. [may be=P. ventricosus, jun.].

4. . rastellinum. Val. [=P. hastatus, iun.].

18

19

", rastelinum, Val. [= P. hastatus, jun.].
Ostrea gallus, Val. ["Acapulco," with large plates, = O. megcdon, Hanl.].
Cardita arcella, Val. [?= Ven. radiata, Sby.]. 21 1.

3.

modulosa (Lam.), Val. [= Lazaria affinis]. turgida (Lam.), Val. [= Ven. luticostata]. Michelim, Val. [= V. Cuvieri]. "

,, Michesm, Val. | = V. Cuvieri |.

Nucula divaricata, Val. [probably = N. castrensis].

Penitella Convadi, Val. [may be = Pholadidea ovoidea].

2. Penitella xilophaga, Val. [may be the adult of fig. 4].
3. Penitella xilophaga, Val. [may possibly be intended for Ph. penita].
4. Pholas rostrata, Val. [is probably=Netastoma Darwinii, Sby. jun.].
5. Ungulina heticola, Val. [may be an extremely bad Petricola robusta].
6. Corbula heticola, Val. [is probably=Sphania fragilis].
7. Bornia luticola, Val. [= Kellia Laperoussi].
8. Saxicava clava, Val. [= S. legumen, Desh., = S. pholadis, var.]. The identification of these species is attended with great uncertainty, as the types have not been seen, and the artist appears to have studied effect rather than accuracy.

42. Voyage of Sulphur.—The types of these species appear to have been scattered. Only a part are now to be found in the very valuable collection of Admiral Sir E. Belcher, in which most of the shells are, unfortunately, destitute both of names and of locality-marks.

Murex Belcheri [belongs to Purpuridæ, and may be considered the type of

the genus Chorus].

Ranella Californica. After comparing a series with the Cumingian specimens of R. ventricosa, it appears that the diagnostic characters are not con-

Marginella sapotilla. [The type in Mus. Cuming is much smaller than the ordinary condition of M. prunum=corrulescens, Lam., to which species the common Panama shells were referred by Mr. Cuming. In his collection. however, they stand thus: - Ordinary Panamic type "sapotilla, Hds.: 5-13 fms., sandy mud, Panama, H.C." Another tablet of the true Panama shells "Marginella, n. sp., Panama,"—"San Domingo" having been crossed out. The small West Indian form, analogous to the typical sapotilla, is given as "glans, Mke." The large West Indian shells, with violet tinge behind the labrum, are "corrulescens, Lam., Panama," without authority. Another series of the W. Indian type is given as "corrulescens, var., Lam., 10 fms., sandy mud, Panama," without authority. Either habitat-errors have crept into the Cumingian labels, or else Mr. Redpath's observation will not hold, viz. that the Atlantic shells have a posterior pinch on the labrum, which is not seen in the Pacific. All the authentic series examined from the two coasts bear out his view. There will be two opinions as to whether this be more than a mere local distinction.]

Solarium quadriceps. On comparing suites of S. granulosum from the Texan coast with series from the Gulf of California, it appeared that on each side of the Peninsula the shells went through similar changes in strength of sculpture, size of umbilicus, number of spiral granules, &c.; nor could any clue be obtained by which the coasts could be separated in a mixed collection. Hinds's shell stands at the furthest extreme of removal from S. granulatum.]

43. U. S. Exploring Expedition.—The shells of this collection were deposited in the Patent Office in Washington, D.C., where, notwithstanding the great care of Mr. Varden, the curator, they were not a little tampered-with. Dr. Gould laboured under great difficulties in his work of description; he had access only to that part of the collection which happened to be unpacked and exposed to view during the brief period that his professional engagements allowed of his visiting the capital; and his request to be allowed to take doubtful shells to Europe for identification was refused. The materials also were of an unsatisfactory kind, a large proportion of the specimens being much weathered, and many of the locality-marks being manifestly erroneous. If occasional errors have been detected in his great work, they may fairly be set down to causes over which the author had no control. Many of these 1863.

have been corrected by Dr. Gould himself, in his 'Otia Conchologica," Boston, 1862, which contains the various papers in the 'Proceedings of the Boston Soc. of Nat. Hist.,' with an appendix. After the organization of the Smithsonian Institution, all the natural-history collections belonging to the Federal Government were transferred to its keeping, with liberty to exchange duplicates. The shells remained unopened, and the types not accessible, till, at the request of Professor Henry, I undertook the arrangement of the collections. Fortunately, a considerable part of the shells professing to be the figured types of the new species were found together, with the artist's marks corresponding with the plates and figures. The result of the examination, so far as the general collection is concerned, will shortly be prepared for the press; it is sufficient here to tabulate the observations on the N.W. American species, which were, as it happened, the most satisfactorily preserved in the whole series. The following additional particulars include the "Rectifications" in the 'Otia,' the paging of which is continued from the "Expedition Shells" quoted in Rep. p. 209. The quarto volume quoted in p. 210 is distinguished as "E. E. Mollusca." The folio atlas of plates bears date on title 1856, but was not published till 1861, teste Binn. Bibl. vol. i. p. 504. The comparisons of types were made in 1860, from a proof copy.

3. Chiton lignosus = [Mopalia] Merckii, Midd., test. Gld. E. E. Moll. [from worn specimens := Ch. Montereyensis, Cpr., from perfect shells.

230. Chiton (Chætopleura) vespertinus. Perhaps = Ch. lignosus, var. A Mopalia, differing slightly in the amount of posterior wave. The fig. in E. E. Moll. is made-up from broken specimens.]

6, 242. Chiton (Onithochiton) dentiens. [The shell sent as type of this species, and all the others seen from the coast, agree in belonging to Ischnochiton, and are not dentate, as would be presumed from the figures and diagnosis. As Dr. Gould's toothed *Onthochiton* may hereafter be found, the Smithsonian shells have been named Isch. pseudodentiens.

6, 242. Chiton (Chatopleura) muscosus. [= Acanthopleura muscosa, H. & A. Ad. Gen.,= Ch. ornatus, Nutt. P. Z. S. 1855, p. 232,+ Mopalia consimilis, Nutt. MS. in B. M. This beautiful species is a true Mopalia.]

230. Chiton (Leptochiton) interstinctus. Resembles C. Sitchensis, Midd. [= Callochiton i., H. & A. Ad., Gen. It is 2 true Ischnochiton. The genera of Chitonidæ cannot always be ascertained by external characters alone, as indicated in Mesers. Adams's genera. All the species in the Smithsonian Museum have been dissected.]

7, 242. Patella (Tectura) fimbriata = P. cinis, Rve. [= Acmæa pelta, Each.].

9, 242. Patella (Nacella) instabilis. [Varies greatly in proportions.]
9, 242. Lottia (Tectura) pintadina. [The types represent the normal condition of Acmæa patina. One variety is A. cribraria, Gld. MS. The speci-

mens of A. mesoleuca intermixed by Dr. G. in the Mexican War collections were, no doubt, affiliated by an oversight.]
10, 243. Patella (Tectura) textilis is a var. of T. persona, Esch.

[A well-marked form of delicate growth, passing from A. persona into A. pelta, var.; from the young of which some specimens can hardly be distinguished, except by the fretted pattern.]
10, 243. Patella (Tectura) scabra = spectrum (Nutt.), Rve., not scabra (Nutt.), Rve.

[The type-specimens belong to two species, f. 456, 456a, being A. spectrum, Nutt., while 456b represents the flattened variety of A. persona, Esch. (approaching the form digitalis, Esch.). As the diagnosis best accords with the latter shell, P. scabra, Gld., may stand as a synonym of persona, var.; the intermixed specimen, accidentally figured as belonging to the species, being removed to spectrum, Nutt. Thus the name scabra, not being needed as first described, will remain for Nuttall's species, described by Rve., but first named in print by Jay.]

Ma, Pa lő. Crepidula lingulata. [Described from a worn specimen. Perfect shells cannot be separated from C. bilebata, Rve., = C. f dorsata, var. bilebuta,

Maz. Cat., nor from the supposed C. dorsata in Mus. Cum.]
Crepidula nummaria. [Described from an aberrant, worn, and rounded specimen. The normal state is C. naricelloides, Nutt. When grown Lō. in hollow bivalves, it becomes nummaria: the contrary extreme, grown in crypts of borers, with another shell or crab over it, is explanata, Gld., = exuviata, Nutt., = perforans, Val. The Lessonoid form is C. fimbriata, Rve. The young appears to be C. minuta, Midd. But the "C. nummaria, Gld.," of Mus. Cum., is quite a distinct species, not known

from the American coast.

50, 244. Natica (Lunatia) caurina + [=L. pallida, Br. & Sby.].

50, 244. Natica (Lunatia) soluta

50, 244. Natica (Lunatia) soluta

50, 244. Natica (Lunatia) algida; "R. Negro," E. E. Shells; "Oregon," E. E. Mo'l.

[verè:=young of L. Lewisii, Gld., July 1847, =L. herculæa, Midd., 1849].

52. Lacuna carinata, Gld., Nov. 1848 [L. solidula, Lov., 1846. Finmark].

52, 245. Litorina patula, Gld. [non Jeffr.], Mar. 1849, = L. planaxis [Nutt.], Phil., 1847. 52, 53. Litorina lepida, scutulata, et plena [are shown by large series to be varietics

of one species]. Ω9. Litorina cincta, Gld., Aug. 1847, Puget Sd. [= L. Sitchana, Phil., 1845.

This species appears to have been overlooked in the E. E. Moll. Cerithium irroratum, Gld. [= C. obessum, Sby. sen., teste H. Cuming. The type proves this to be an E. I. species, and not the Pauamic C. stercusmuscarum, Val., as supposed by Dr. Gld.: v. C. B. Ad. in loco]. Cerithium filosum, Gld., May 1849 [= Turritella Eschrichtii, Midd., 1840, (Bittium). Comp. C. filosum, Phil., Z. f. M. 1848, p. 84. California]. 61.

G2. 64, 245. Fusus (Bela) fidicula.

64, 245. Fusus (Trophon) Orpheus [(non Baird.) = T. Fabricii, Moll., in Br. Mus.]
67, 245. Buccinum (Nassa, s. g. Tritia) fossatum. Cæsia in Ind. p. 253. [=N. elegans, Rve., 1842, non Dujardin: = Zaphon e., Add.].

70, 245. Nassa (Tritia) mendica = N. Woodwardi, Fbs., 1850 [from. types: + N.

Gibbesii, Coop.]. 71, 245. Columbella (Alia) gausapata. [Belongs to the Nassoid group, Amycla.]
75. Mya pracisa [= M. truncata. Scarcely even a variety; but approaches

the form Aldrovandi.

76, 245. Lutraria (Tresus) capaz. [Dr. G. revives his excellent name; L. maxima, Jonas, 1844, being anterior to Midd. Conrad's name, Schizothærus Nuttallii, is, however, very much earlier.]

77, 246. Osteodesma (Lyonsia) bracteatum [+O. nitidum, Gld., in different states of preservation, =L. Californica, Conr. The "golden nacre" of O. brac-

Cardium blandum, 1850. [A finely grown Pvar. of C. Californiense, Desh., 1839, Midd. (non C. Californianum, Conr., 1837, = corbis, var.) = C. pseudo-83. fossile, Rve., 1844. The name is so like the preoccupied Californianum

that it may advantageously be dropped.]

Venus rigida, 1850 [non Dillw. 1817. It is fortunate that the name is not needed, as the author has joined two very different species, both 85. of which have other names. The original Latin diagnosis applies to the rough northern form of Tapes staminea, Conr., which is the Saxidomus Petitis of Desh., and includes V. ruderata, Desh. But the "specimen, 33 in. long," which modified the description in the E. E. Moll., and is figured at f. 538, proves to be the adult form of *Tapes tenerrima*, Cpr., P. Z. S. July 1858, which is a Californian and not a Panamic species, as had been supposed from Col. Jewett's label].

87.248. Anodonta cognata = A. Oregonensis, Lea (probab'y). Ano: lon!a feminalis [= A. angulata, var., teste Lea].

Mytius (Modiola) flabellatus. [The northern form of Mcdiola recta, Cont. The "specimens from the Gulf of California" must have been M. Bra-93. ziliensis, intermixed by accident.]

94. Mytilus trossulus [is scarcely a variety of M. edulis, which is very abundant along the coast, under its usual modifications of form and colour; but generally of small size

95. Pecten hericeus, Gld. [=P. hastatus, Sby. sen.]. 97, 248. Terebratula (Waldheimia) pulvinata.

97, 246. Terebratula (Terebratella) caurina.

E. E. Moll.

Page.
113. Planorbis corpulentus is of Say.
143. Melania plicifera is of Lea.

436. Anodonta angulata is of Lea.

206. Scalaria Paustralis [is abundantly confirmed from the Vancouver district. It should be called *Opalia borealis*, Gld.].

244. Purpura ostrina, Gld., 'Otia,' p. 225 [is an aberrant smooth var. of P.

lapillus, Coop., non Ln.; the normal state being P. sazicola, Val.].

The following species, described in the 'Otia' and 'E. E. Moll.' as from 'N. Zealand ' and an unknown locality, are really from Puget Sound.

Otia, Page. 56, 245. Trochus pupillus, Gld., March 1849: N. Zealand (Ziziphinus in Index):= Margarita calostoma, A. Ad., 1851. Comp. T. modestus, Midd. [which is, however,=ligatus, Gld.,=costatus, Mart. This species is named in the B. M. Col. "M. costellata, Sby.," but is distinct, teste A. Ad. & Mus. Cum.].

64, 245. Fusus (Neptunca) incisus, Gld., May 1849. Hab.?— [= Tri (Fusus) Sitchense, Midd., 1849, = Buccinum dirum, Rve., 1846.] = Tritonium

B. A. Rep.

210. Venus calcarea [is correctly described by Dr. G. as from N. Zealand; although quoted by him as the Oregon analogue of V. mercenuria].

211. Tellina Californica, Conr. [= Macoma inconspicua].

- 211. Triton tigrinum [is from Central America, not] Puget Sd.
 211. Pecten Fabricii, Phil. [is the young of Islandicus: Dr. G.'s shells are the young of P. ("rubidus, ?var.") Hindsii].
 211. Fusus cancellinus. [Dr. G.'s shells are Ocinebra, var. aspera.]
 212. Purpura lagena, Gld. [MS., is probably saxicola, var.].
 213. Pecten Townsendi [has not been identified].
 214. Varus carefulista [in the lived by Dr. G. to by we been first designed by him.

213. Venus ampliata [is believed by Dr. G. to have been first designated by him as a species, afterwards proved = rigida (Petitii), var.].

44. Middendorff.—The synonymy given in Rep. pp. 214-222 is that of the author, not of the writer of the Report, who is by no means prepared to accept the learned doctor's identification of species. The three Chitons quoted with doubt from Tilesius have not been confirmed, as from Kamtschatka, by any other writer. The Ch. giganteus has the aspect of the large Ischnochiton Magdalensis; the Ch. muricatus belongs to the Lophyrus group, which is not known so far north; and the Ch. setosus has also a S. American aspect. The treatise "De Chitone Giganteo Camtschatico additamentum ad Zoographiam Rosso-Asiaticum, auctore Tilesio," was read March 19, 1823, and published in 1824. It contains a very valuable and (for that period) remarkable account of the anatomy of Chitons, but it does not profess to name and describe species in the modern sense. The names, therefore, had better be dropped. Middendorff's new species were first described in the 'Bulletin de la Classe Physico-Mathématique de l'Académie Impériale des Sciences de St. Pétersbourg,' a work of which few complete copies are known in England, under the following dates.

April 20, 1847: vol. vi. No. 8 (total number 123).

```
116. Chiton Stelleri, n. s., = C. amiculatus, Shy., Rve., non Pallas.
117. Chiton Pallasii, n. s.
117. Chiton Brandtii, n. s. [Ischnochiton].
118. Chiton Eschscholtzii, n. s.
119. Chilon Wosnessenskii, n. s.
                                       [A typical Mopalia: mantle indented behind.]
120. Chiton Merckii, n. s. [ = Ch. lignosus, Gld., July 1846 := Mopalia Montereyen-
sis, Cpr.].
120. Chiton lividus, n. s.
121. Chiton scrobiculatus, n. a., California.
      Chiton Sitchensis, n. s
    Nov. 1847 (read April 28): vol. vi. No. 20 (total number 140).
317. Patella (P. Acmæa) ancyloides, n. s. [Probably a delicately grown young patina: the diagnosis, however, suits textilis. Name afterwards altered to per-
         sonoides, to distinguish from Propilidium ancyloide, Fbs.
318. Patella (? Acmaa) aruginosa, n. s. [Probably = textilis, Gld., 1846; but the
         figure is more like scabra, Nutt.]
318. Patella (? Acmaea) pileolus, n. s. [Probably the young of A. pelta; but assigned
         in Mus. Cum. to a very different shell, = A. rosacca, Cpr.]
318. Patella (? Acmæa) Asmi, n. s. [A specimen of A. pelta, in Dr. Cooper's col-
lection, began life as A. Asmi.]
319. Patella (?Acmæa) cæca; genuina, vertice erecto, Atlantic.
319. Patella (?Acmæa) cæca, var. concentrica; vertice subinflexo; with crowded
         lamellæ of growth.
  1849; read Oct. 6, 1848: vol. vii. No. 160. "Vorläufige Anzeige einiger neuer
Konchylien aus den Geschlechtern: Litorina, &c., von Dr. A. Th. v. Middendorff."
241 no.1. Litorina grandis. [The specimens in B. M. and Mus. Cum. appear to
                represent a large var. of L. litorea.]
        2. Litorina Kurila (like tenebrosa)
242
242
        3. Litorina subtenebrosa. [Probably an extreme var. of L. Silchana.]
        4. Tritonium (Fusus) antiquum, Ln., var. Behringiana.
5. Tritonium (Fusus) Behringii.
243
243
243
        6. Tritonium (Fusus) Baerii.
        7. Tritonium (Fusus) Sitchense [probably = Chr. dirus, Rve., var.; but stated to be "e livido viridescente; columella sæpius umbilicata"].
244
        8. Tritonium (Fusus) luridum [= Vitularia aspera, Baird, smooth form].
214
      9. Tritonium (Buccinum) simplex.
10. Tritonium (Buccinum) Ochotense
244
244
       11. Tritonium (Buccinum) undatum, Linn., var. Schantarica.
245

    Tritomium (Buccinum) ooides.
    Bullia ampullacea [is the genus Volutharpa of Fischer].
    Natica herculæa, North California [= L. Lewisii, Gld., July 1847].

246
      16. Margarita arctica, Leach, var. major.
```

In the text of the 4to volumes, the following corrections are suggested, the numbers referring to the page in the B. A. Report which contains the abstract.

Report, 215. Acmaa scutum, D'Orb. [is quite distinct from A. persona, Esch. The latter, as figured by Midd., is a very young shell, not certainly be-

longing to the species].

216. Turritella Eschrichtii. [= Bittium filosum, Gld., May 1849. There being no month-date to Midd.'s species, the excellent name of Gld., which may also be of Phil. 1848, should be retained.]

216. Trochus ater and mæstus [are well-marked South American species. Probably the shells intended are Chlorostoma funebrale, A. Ad., and its congeners.]

216. Trochus euryomphalus [= Phorcus pulligo, Mart., teste Dohrn].
216. Trochus modestus, Md. [= filosus, Wd., = Calliostoma costatum, Martyn].
216. Trochus (Turbo) Fokkesii [is from the peninsula of Lower Cal.].

216. Natica flava, Gld. ["is entirely different from any of the synonyms under it," teste Gld.].

- Report, 216. Scalaria Ochotensis [appears an aberrant Opalia; but is the genus Acirsa of Mörch, closely allied to Mesalia, teste A. Ad.].
 - 216. Crepidula Sitchana [is figured like the young of grandis; but the specimens in Mus. Cum., when compared with the similar stage of C. excavata, display no differences either inside, outside, or in the nuclear whorls

 - 216. Crepidula minuta [appears the young of C. nacicelloides, Nutt.]
 216. Crepidula grandis [fossil at Sta. Barbara, = C. princeps, Conr. Can hardly be distinguished from very fine specimens of C. fornicata, sent from Halifax, Nova Scotia, by Mr. Willes].
 - 217. Trichotropis cancellata, Hds. [is quite distinct from T. borealis]. 217. Purpura decemcostata, Midd. [= P. canaliculata, Ducl. Var. =
 - tenuata, Rve. Var. = P. analoga, Fbs.
 - 217. Tritonium (Trophon) clathratum, In. [is distinct from the shouldered M. multicostatus, Esch.,= Gunneri, Lov.].
 217. Tritonium (Fusus) decemcostatum [= Chr. Middendorffi, Cooper= Chr. liratus, Martyn.]
 - 218. Tritonium (Buccinum) cancellatum [Midd., non] Lam. [=Priens Oregonensis, Redf. P. cancellata is the Cape Horn species. Some specimens in alcohol in Sir E. Belcher's collection, however, said

 - to be from Icy Cape, greatly resemble the southern shell].

 218. Tritonium (Pollia) scabrum [is exclusively a S. American shell. Dr. M.'s shell may have been Ocinebra, var. aspera].

 218. Pecten rubidus, Hds. [non Martyn, = P. Islandicus, Müll. Midd.'s pl. 13. f. 1-3 are marked in expl. of plates "Islandicus, var. Behringiana;" they are probably ("rubidus, evar.") Hindsi. But the figs. 4-6 are certainly the young of Hinnites giganteus].
 - 219. Venerupis gigantea. [Decorticated specimens of Saxidomus squalidus.] 219. Petricola gibba. [Elongated form of cylindracea, Desh., = carditoides, va.]
 - 219. Machæra costata. [The figures represent M. patula, Dixon.]
 220. Cingula minuta ["is quite distinct from Hydrobia ulvæ," teste Gld.].
 - 220. Velutina cryptospira. [Probably a Lamellaria.]
 220. Purpura Freycinettii, Desh. [is quite distinct from attenuata, Rve. is doubtful whether Midd.'s shells belong to Desh.'s species].
 - 221. Terebratula frontulis, Midd. 1851, named in 1849, may be the young of Waldheimia Coreanica, Ad. & Rve., 1850, = Terebratella miniuta,
 - Gld., 1860, teste A. Ad., Rve.].
 - 221. Astarte lactea, Gld. [is distinct from A. Scotica, teste Gld.]. 221. Tellina fusca, Say [is distinct from T. solidula, though it may = T. balthica; teste Gld. Macoma inconspicua, Br. & Sby., is distinct from
 - both].
 - 222. Lyonsia hyalina [is distinct from L. Norvegica].
 - 222. Machæra costata, Say. [Dr. Gould does not believe that any of Midd.'s synonyms belong to this species. Siden medius, in Br. Mus., appears S. ambiguus, Lam., as figured by Swains. It is not a Machæra.]
- 45. Samarang.—Litorina castanea, Ad. & Rve., 1850. "Eastern Seas," p. 49, pl. 11. f. 8 [appears identical with L. Sitchana, Phil.].
- 46. E. B. Philippi.—Columbella taniata, Phil., 1846 [is probably identical with Anachis Gaskoinei, Cpr. But C. taniata, Ad. & Rve., 1850, is perhaps a Nitidella].
- 47. The "Mexican War Naturalists."—These were Major Rich and Lieut. Col. E. Jewett was not connected with the war, as would be supposed from the introduction to Dr. Gould's pamphlet. The following corrections apply to the new species tabulated in Rep., pp. 226-228. The species of Gould bear date April 1852 (teste Otia, p. 184) and Nov. 1851 (Otia, p. 210); the others, July 1856.
- Corbula polychroma [=C. biradiata, var.]
 - 7. Tellina tersa [= Macoma nasuta, jun. Cal., not Pan.].

- 8. Tellina pura [= M. Mazatlanica, jun. Desh., Mus. Cum.].
- 11. Donar flexuosus [= D. Lamarckii, Desh., in B. M.
- Gnathodon mendicus [= G. trigonum, Pet., May 1853].
 Raēta unduluta [is distinct from Hurvella elegans].

- 10. Nation introducts in manner from Invector very major.
 20. Cardium luteolabrum [= C. quadragenarium, Conr.].
 21. Cardium cruentatum [= Liocardium substriatum, Conr.].
 22. Modiola nitens [= M. subpurpureus, Mus. Cum., and is not from Cal.].
 23. Adula falcata. [The locality of Mr. Cuming's specimens has not been confirmed. For "specimens" in note, read "specimens."]
 21. Line total and The engineers from the Meditarrance W. Indice Gulf Cal.
- 31. Lima tetrica. [The specimens from the Mediterranean, W. Indies, Gulf Cal., and Pacific Islands were all named L. squamosa by Mr. Cuming.]
- Bulimus vesicalis (ncm. preoc.) = B. sufficius, 'Otia,' p. 184.
 Nacella paleacea. [Col. Jewett's specimens appear distinct from N. depicta, Hds.]
 Trochus marcidus. [This shell was called Omphalius Pfeifferi by Mr. Cuming,
- from the resemblance of the figure, in which the umbilicus appears keeled; but the shell marked 'type,' answering to the diagnosis, along with 'Chlorostoma' maculosum, A. Ad., are scarcely varieties of Phorcus pulligo, Martyn. The finest series is in the B. M.]
- 43. Lirona picoides [has been heard of, but not seen since the explorations of Col. J. Dr. Gld. still considers the species distinct: among the very dissimilar varieties from the W. Indies (vide suite in B. M.) it would probably not have been singled out as a species, but for the theory of the author].
- Crucibulum Jewettii [should be corrugatum, P. Z. S.].
 Modulus dorsuosus. [Col. J. now thinks that the supposed Acapulco specimens are W. Indian, = lenticularis, Chem. When dead, the forms from the two oceans can hardly be distinguished; but the aspect of his shells is Caribbean.]

 54. Comus ravus [= C. Californicus, Hds.].
- 56. Conus pusillus, Gld. [non Chem. = nux, small var., teste Cuming]. 57. Obeliscus achates [= 0. clarulus, A. Ad., 1854].
- 65. Columbella Sta.-Barbarensis [so named to correct the statement that California was above the limit of the genus, proves to be a Mexican shell, and was probably obtained at Acapulco. Having been redescribed by Reeve from
- perfect specimens, it may stand as C. Reevei].
 60. Nitidella Gouldii. [Not to be confounded with Col. Gouldiana, Agass., which is probably Amycla.]
- 67. Fusus ambustus [is a Californian species. The type stands in Mus. Cum. as F. fragosus, Rve., but does not answer to the diagnosis. The typical fragosus is marked fragosus, var. F. ambustus appears absolutely identical with F. clavatus, Brocchi, Mediterranean. Some of the diagnostic marks are not constant in the specimens].

Col. Jewett went to Panama, as a private collector, in January 1849, spending ten weeks in that region, including Taboga. This was two years Thence he sailed to San Francisco, before Prof. Adams's explorations. where he spent four months in exploring the shore for about 50 miles from the head of the bay. After labouring for a week at Monterey, he spent ten weeks at Sta. Barbara and the neighbourhood, thoroughly exploring the coast for fifteen miles as far as Sta. Bonadventura. It was here, at the "Rincon," after a violent southern storm, that he obtained the specimens of Livona picoides, as well as many other rare species that have not been obtained by any other explorer. "The storm tore up the kelp to such a degree that it formed a bank for many miles on the beach, from 10 to 20 feet broad, and at least 4 feet deep. Many of the plants were more than 60 feet long and 5 inches in diameter, having the appearance of vast cables." Before his return to the east, he also collected at Mazatlan (where he obtained some species not included in the B. M. Catalogue) and at Acapulco. There can be no doubt of the accuracy of the Colonel's observations at the time they were made. Unsurpassed in America as a field-palæontologist, possessed of accurate

discrimination, abundant carefulness, and unwearied diligence and patience. no one was better fitted to collect materials for a scientific survey of the coast. But, unfortunately for his (as for the Nuttallian) shells, he did not describe them at the time himself. They were subjected to all the derangements caused by frequent changes of residence, and transmission to various naturalists for identification. As we know what errors creep into the collections of the most learned under such circumstances, it is not surprising that they should now have lost much of their geographical value. After several days spent in a very searching elimination of the west-coast shells from his general collection, I was driven to the conclusion that several labels had become misplaced. This was so clearly the case as to certain N. England and W. Indian species interchanged with Pacific specimens, that it might also affect (e. g.) Sta. Barbara and Panama specimens as compared with each other. The kelp driven up by the great storm may have travelled from remote localities; which will account for tropical shells having been found at Sta. Barbara, as W. Indians occasionally are even on our own shores. It is possible also, as the Californian seas have as yet been but little dredged, that deep-water species live there which as yet are known only in the tropical province. Already some Gulf species have been thus obtained at San Diego and Catalina Island by Dr. Cooper, just as Mr. M'Andrew dredged Mediterranean species on the coast of Norway. But facts of such importance should rest on better evidence than chance shells picked on a beach, and subjected to dangers of altered labels afterwards. What was regarded by Dr. Gould as of authority is catalogued, according to his determinations of species, on pp. 226-231 of the first Report. The following is a list of the species which I found in the collection. divided simply into the temperate and the tropical faunas.

Species of the Temperate Fauna, collected by Col. Jewett 1.

Pholadidea penita, ovoidea. Saxicava pholadis. Schizotheirus Nuttallii. Cryptomya Californica. Lyonsia Californica. Solen Psicarius, var. rosaceus *†. Machæra patula. Solecurtus Californianus, subteres. Macoma nasuta, secta. Lutricola alta. Semele decisa, rubrolineata. Donax Californicus, flexuosus. Standella ?Californica. Trigona crassatelloides. Psephis tantilla*. Amiantis callosa. Chione succincta, fluctifraga, simillima. | Bulla nebulosa.

Tapes staminea, tenerrima *. Saxidomus squalidus. Petricola carditoides. Rupellaria lamellifera Lazaria subquadrata *†. Chama pellucida. Lucina Californica. Diplodonta orbella. Mytilus Californianus, edulis. Modiola modiolus, recta, fornicata * †. Leda cælata. Pecten hastatus, latiauritus, (?ventrico-sus, var.) æquisulcatus †, squarrosus *†, paucicostatus *†. Amusium caurinum, jun. Hinnites giganteus.

- ^a This collection belongs to his daughter, Mrs. Boyce, of Utica, N.Y. The Colonel's invaluable collection of U. S. Palseozoic fossils (probably the largest made by any individual's own hand) may be consulted at the State Museum in Albany, and will probably find its ultimate destination at one of the principal colleges. A large number of the fossils described by Prof. Hall were from this collection, though often without acknowledgment. Only a small proportion of the types of the celebrated 'Palscontology' are to be found in the State Collection, which was subjected to disastrous and very extensive curtailment before Col. J. entered on his present duties as curator.
 - These species and marked varieties were first found by Col. J.
- † Of these forms, either not seen or not distinguished by Dr. Gould, the disgnoses are
- written, and will probably be found in one of the scientific periodicals for 1864.

 † Unless otherwise stated in the list, Report, pp. 228-231, it may be presumed that these species were from the neighbourhood of Sta. Barbara.

Tornatina cerealis*, culcitella*. Cylichna (?cylindracea, var.) attonsa °†. Volvula cylindrica °†. Cryptochiton Stelleri. Mopalia muscosa. Nacella incessa, paleacea *. Acmæa patina, pelta, persona, scabra, spectrum, Asmi. Scurria mitra. Fissurella volcano. Glyphis densiclathrata. Haliotis Cracherodii, rufescens, splendens. Phasianella (?compta, vars.) punctulata * †, pulloides *†, elatior *†. Pomaulax undosus. Trochiscus Norrisii, convexus *†. Calliostoma canaliculatum, costatum, Livona picoides . Homalopoma sanguineum. Chlorostoma funebrale, Pfeifferi. Crucibulum spinosum. Crepidula adunca, dorsata, rugosa. Hipponyx tumens *†. Serpulorbis squamigerus. Bittium esuriens * †, fastigiatum * †. Cerithidea sacrata. Litorina planaxis, scutellata. Amphithalamus inclusus * †. Lacuna unifasciata . Radius variabilis. Luponia spadicea: Trivia Californica. Erato columbella, vitellina.

Drillia inermis, mœsta * †. Daphnella filosa *t. Mangelia variegata ot, angulata ot. Myurella simplex *+. Myurena simples | .
Conus Californicus.
Odostomia gravida *, inflata * †.
Chemnitzia tenuicula *, torquata * (et Pvar. stylina * †), virgo * †, aurantia * †, crebrifilata * †, tridentata * †. Dunkeria laminata * †. Eulima Thersites *†. Opalia bullata *†. Lunatia Lewisii. Cerithiopsis Ptuberculata, fortior *†, purpures *†.

Marginella Jewettii *, Ppolita, regularis *†, subtrigona *†. (Volvarina varia, serrata; perhaps imported, or label changed.)
Olivella biplicata, bætica † [=petiolita,
Gld.,+anazora, Gld., MS. (non Ducl.) =rufifasciata, teste Cum., by error]. Purpura crispata, saxicola. Nitidella Gouldii *. Ocinebra Poulsoni. Pteronotus festivus. Columbella carinata, Hindsii. Amycla ? Californiana, gausapata, tuberosa *†. Nassa perpinguis, mendica. PAnachis penicillata *†. Siphonalia fuscotincta *†.

Species of the Tropical Fauna, collected by Col. Jewett a.

Pholas crucigera [=lanceolata]. Dactylina laqueata. Corbula bicarinata, biradiata, nasuta, tenuis, ovulata §, nuciformis §. Sanguinolaria miniata . . Psammobia casta. Tellina felix, puella , punicea, "rubella." Heterodonax bimaculatus et vars. §. Strigilla carnaria (white and red vars.) pisiformis, sincera. Semele pulchra \$, venusta \$. Iphigenia altior. Donax transversus, navicula, gracilis, carinatus, rostratus \$, punctatostriatus §, v. cælatus §, assimilis. Mulinia angulata, Harvella elegans. Trigona planulata ||, Hindsii §. Desinia Dunkeri.

Callista aurantia, chionæa, circinata §, tortuosa, lupinaria||, rosea||, v. puellas. Chione amathusia, sugillata, neglecta. Anomalocardia subimbricata, subrugosa, Tapes grata, + vars. discors, fuscolineata. Petricola pholadiformis, var. Crassatella gibbosa. Venericardia laticostata, radiata. Lazaria affinis. Chama frondosa, spinosa. Cardium consors \$, senticosum, procerum, obovale. Hemicardium biangulatum §, graniferum. Liocardium apicinum §. Codakia tigerrina ||¶. Lucina eburnea §, excavata §, pectinata. Felania tellinoides §, var. Modiola Brasiliensis, capax. Lithophagus aristatus Arca grandis, tuberculosa.

^a Unless otherwise specified, either by §, ||, or locality-marks in Rep. pp. 228-231, these species may be presumed to have come from the Panama district.

[§] These species were probably from Acapulco.

Probably from Mazatlan.

Another specimen, 3.78 in. across, is marked "Sta. Barbara" on the shell.

Scapharca bifrons *, emarginata, labiata, Noëtia reversa Byssoarca Pacifica, mutabilis. Barbatia alternata, aviculoides, gradata, illota, solida. Pectunculus inæqualis, maculatus, parcipictus §, ? pectinoides §. Leda Elenensis, polita. Pinna maura, tuberculosa. Avicula sterna. Bryophila setosa *. Isognomon Chemnitzianum. Pecten ventricosus, subnodosus 5. Lima angulata Spondylus calcifer. Ostrea palmula. Anomia lampe. Bulla Adamsi, Quoyi §. Siphonaria gigas, lecanium § et vars. maura, palmata §. Patella Mexicana. Acmæa mesoleuca, mitella, vernicosa. Fissurella rugosa, nigropunctata, ?macrotrema §. Glyphis inæqualis, alta. Phasianella perforata. Callopoma saxosum. Senectus squamigerus §. Uvanilla inermis. Calliostoma lima, Leanum §. Tegula pellis-serpentis. Omphalius Panamensis, coronulatus *, ligulatus ∥, viridulus. Nerita Bernhardi, scabricosta. Neritina picta, Guavaquilensis, intermedia ["=globosa, Brod."]. Crucibulum imbricatum, spinosum, umbrella, radiatum, pectinatum *, corrugatum *. Galerus conicus, mamillaris. Crepidula aculeata §, excavata, incurva. Hipponyx barbatus, Grayanus. Aletes centiquadrus. Vermetus eburneus Bivonia contorta, albida. Petaloconchus macrophragma. Turritella goniostoma. Cerithium maculosum, uncinatum, me-diolæve, interruptum, alboliratum. Rhinoclavis gemmata. Cerithidea Montagnei, varicos Litorina aspera, conspersa, Philippii. Modulus catenulatus, ?disculus. Rissoina firmata*, fortis*, expansa*†||, stricta §, Janus*, Woodwardii ||. Planaxis nigritella, planicostata. Radius avena §, similis. Carinea emarginata, jun. Aricia punctulata. Trivia pustulata, pulla, Pacificas.

Erato scabriuscula §, Maugerice. Strombus galeatus, gracilior, granulatus. Terebra robusta. Euryta fulgurata, aciculata \$... Pleurotoma funiculata. Drillia albovallosa, aterrima, ?exarata §, incrassata, nigerrima, rudis, hexagona, Pgracillima, var. Mangelia subdiaphana \$, hamata *†, cerea *†, Ppulchella. Cithara stromboides [?=triticea, Kien.]. Daphnella casta §. Conus gladiator, mahogani, nux, purpurascens, regularis. Solarium granulatum. Torinia variegata. Obeliscus achates *|| Chemnitzia celata *†. Scalaria Hindsii *. Alora Gouldii *. Cancellaria bulbulus, clavatula, decussata, goniostoma, tessellata, mitrifor-Natica maroccana et vars., Souleyetiana, zonaria §, catenata §. Polinices otis, uber. Neverita patula §. Ficula ventricosa Malea ringens. Bezoardica abbreviata. Levenia coarctata. Persona ridens [? =] constrictus. Triton lignarius, tigrinus, ? pileare, jun. Priene nodosa. Ranella cælata, nitida, triquetra, pyramidalis [like anceps and producta, Rve.]. Fasciolaria granosa, tulipa, jun. [?imported]. Latirus castaneus, ceratus, rudis, tuberculatus. Leucozonia cingulata. Mitra lens, funiculata, nucleola. Strigatella tristis. Lyria harpa. Marginella cærulescens, polita (P§). Persicula imbricata §. Volvarina triticea §, varia §, serrata §, fusca § [some of these are assigned to Sta. Barbara. West Indian specimens may have been intermixed: vide Cape St. Lucas list, infrà]. Oliva angulata, porphyria. Olivella anazora, gracilis \$, inconspicua, semistriata, tergina, volutella, zonalis, Zanoëti. Agaronia testacea. Harpa crenata. Purpura biserialis, melo, patula, triangu-

laris, triserialis.

Rhizocheilus nux. Vitularia salebrosa Ocinebra erinaceoides. Monoceros brevidentatum. Sistrum carbonarium §. Nitidella cribraria. Columbella festiva, fuscata, labiosa, major, Reevei \$5, uncinata \$, ? millepunctata, var.§ Conella coniformis. Truncaria modesta. Nassa collaria , corpulenta, crebristriata, luteostoma, pagodus, scabriuscula, tegula, versicolor, complanata, Stimpsoniana *, nodicincta. Phos gaudens.

Pyrula patula.
Engina Reeviana, crocostoma.
Anachia Californica \$\xi\$, coronata, costellata, fluctuata, lyrata. nigricans, parva, pygmæa, diminuta \$\xi\$, rugosa, varia.
Strombina bicanalifera, gibberula, recurva.
Pisania gemmata, insignia, pagodus, ringens, sanguinolenta.
Northia pristis.
Clavella distorta.
Murex recurvirostris, [?=] nigrescens (Cum.).
Muricidea alveata\$, dubia, vibex, "pinniger, Brod."

This list, of about 133 species from the northern and 328 from the southern fauna (nearly twice as large as that sent by Dr. Gould and printed in the first Report, and yet not containing several species there quoted), is an instructive instance of what may be accomplished in about three-quarters of a year, simply by picking up shore-shells. It contains about 48 species in the northern and 22 in the southern faunas not previously described.

Besides the recent shells, Col. Jewett brought home a very interesting series of Pliocene fossils from the neighbourhood of Sta. Barbara. Almost all of them are species known to inhabit neighbouring seas, and are chiefly northern forms. Of some no recent specimens have yet been found in such perfect condition. The following is a list of the species, which is of the more value as they have not been intermixed with those of any other locality, and the spot does not seem to have been discovered by any succeeding geological explorer. It was two miles from the coast, and 150 feet high.

Schizotheirus Nuttallii. Mactra planulata. Chione succincta . Pachydesma crassatelloides. Psephis tantilla, Psalmonea. Rupellaria lamellifera. Cardium graniferum *. Venericardia v. ventricosa †. Lucina Californica. Pecten floridus *. Hinnites giganteus. Planorbis, sp. Calliostoma costatum. Margarita pupilla †. Omphalius aureotinctus. Galerus fastigiatus †. Crepidula grandis † [Midd., = princeps, Conr., 3.5 inches long]. Crepidula adunca navicelloides. Turritella Jewettii, n. s. Bittium rugatum, n. s. armillatum, n. s. " filosum †. Lacuna solidula †.

Chrysallida, sp. Opalia (?crenatoides, var.) insculpta , Lunatia Lewisii. Natica clausa †. Priene Oregonensis †. Olivella biplicata. Columbella carinata Amycla gausapata. tuberosa, n. s. PTruncaria corrugata. Nassa fossata. mendica. Purpura crispata. Ocinebra lurida. Trophon tenuisculptus †, ?n. s. [may prove identical with T. fimbruatula, A. Ad., Japan]. Trophon Orpheus †. Fusus ambustus. Pisania fortis , n. s. Chrysodomus carinatus †, Brit. Mus. [probably = despectus, var.]. Chrysodomus tabulatus, jun. +, n. s. dirus t.

* These species are of a southern type.

[†] These forms rank with the northern series. The rest belong to the present Californian fauna.

The following fossils were also col- | Tellina congesta, Conr. Monterey. lected by Col. Jewett :-Purpura crispata (San Francisco, 160 ft. ostrina (above the Bay.

Scalaria: can scarcely be distinguished from planicostata, Kien., in Brit. Mus. (?=Grælandica): Panama.

The collections of Major Rich, having been tabulated by Dr. Gould simply as from Upper or Lower California, I had expected to find of but little geographical value. They proved, however, to be of peculiar interest. Major Rich had been one of the naturalists in the U.S. Expl. Exp., and his warlika occupations did not prevent his remaining long enough at particular stations to pay close attention to the Molluscs. His forte lay in procuring shells in the best possible condition; and a study of them was very serviceable in explaining the dead shore-shells usually obtained from other sources. Fortunately, he was quite aware of the importance of geographical accuracy, and arranged those obtained at different places in separate drawers. The "Upper Californian" collections were made at Monterey, San Francisco, San Diego, and San Pedro; the "Lower Californian," in the Gulf, principally at La Paz, partly at San Jose and Mazatlan. At the latter place he met M. Reigen, who had filled his house with decomposing molluses to such an extent as to induce the neighbours to have recourse to the police. From him he obtained many species not in the Brit. Mus. Cat., and probably sent to Europe in the Havre collection. Major Rich's beautiful series may be consulted at his residence, opposite the British Legation, Washington, D. C.; and are designed ultimately for one of the public museums in the neighbourhood. The following is a list of the species:-

Shells collected by Major Rich, from the Culifornian Fauna.

Pholadidea ovoidea 12. Parapholas Californica 1. (The young is very acuminate, with imbricated cups, as in P. calva.) Netastoma Darwinii 1. Saxicava pholadis 13. Platyodon cancellatus 4. Schizotheirus Nuttalli 4. Cryptomya Californica 1. Thracia curta 1. Lyonsia Californica 1. Mytilimeria Nuttalli 1. (Very fine, with ossicle.) Solen sicarius 3. Machæra patula 1. Solecurtus Californianus . Sanguinolaria Nuttalli 4. Psammobia rubroradiata 1. Macoma nasuta 1, secta 14 Scrobicularia alta 4. Semele decisa 4. Cumingia Californica 1.

Donax Californicus 1. Mactra Californica 1. Pachydesma crassatelloides 1 4. Amiantis callosa 4. Chione succincta 4.

Tapes stamines et vars. 124, laciniata 1 • Petricola carditoides 1. Rupellaria lamellifera 1. Chama Buddiana 4. Cardium Nuttalli 4. Lucina Californica 1. Diplodonta orbella 4. Kellia Laperousii 1. Mytilus Californianus¹, edulis¹, v. glomeratus *4. Septifer bifurcatus 10. Modiola modiolus 1. Lithophagus attenuatus 1. Adula falcata 1 . Pecten v. æquisulcatus 4, monotimeris 4. Hinnites giganteus 1. Placunanomia macroschisma 1. Bulla nebulosa 4. Katherina tunicata 1 Mopalia muscosa 1, Hindsii 1. Nacella incessa 2. Acmæa persona 2, pelta 2, spectrum2, scabra 2, et var. limatula †2. Lottia gigantea 2. Scurria mitra 2. Fissurella ornata 4 2.

1 Monterey. Fresh specimens of seven species from the southern fauna were also obtained at Monterey, probably from commerce. A Near San Pedro.

³ San Francisco. ² San Diego. * These species were first found by Major Rich.

Glyphis densiclathrata².

Lucapina crenulata¹ (one spec. Catalina Is.).

Haliotis rufescens¹⁴, Cracherodii¹⁴,

Kamtschatkana¹⁴.

Pomaulax undosus⁴.

Trochiscus Norrisii² (and Catalina Is.).

Calliostoma canaliculatum¹, annulatum¹, costatum¹.

Omphalius fuscescens⁴.

Chlorostoma funebrale¹, brunneum¹,

Pfeifferi¹.

Crucibulum spinosum².

Crepidula rugosa ², adunca ², explanata ³. Hipponyx ² antiquatus ², ² fumens ¹. Serpulorbis squamigerus ². Spiroglyphus lituella ² ⁶. Litorina planaxis ¹. Trivia Californica ¹. Conus Californicus ⁴. Ranella Californica ⁴. Ranella Californica ⁴. O.ivella biplicata ¹, bætica ¹. Purpura, vars. ostrina ¹, emarginata ¹. Cerostoma Nuttalli ⁴. Nassa mendica ¹, perpingius ¹, fossata ¹. Helix, three sp.

Shells collected by Major Rich, near La Paz (west shore of the Gulf of Cal.).

(Thracia) Cyathodonta plicata. Sanguinolaria miniata. Tellina Cumingii. Strigilia carnaria. Heterodouax bimaculatus. Iphigenia altior. Donax navicula, punctato-str., rostratus. Standella fragilis (common). Mulinia angulata. Trigona argentina, radiata, planulata. Dosinia ponderosa. Callista concinna, chionæa. Chione succincta, amathusia, gnidia, pulicaria, var. Anomalocardia subimbricata. Tapes grata, histrionica. Lazaria Californica Chama spinosa, producta, corrugata. Cardium consors, biangulatum. Liocardium elatum. Codakia tigerrina (two fine specimens). Cyrena olivacea, Mexicana. Anodonta glauca. Mytilus multiformis. Modiola capax. Arca multicostata Barbatia Reeviana, solida, Pectunculus gigantetts. Pinna rugosa. Margaritophora fimbriata. Isognomon Chemnitzianum. Pecten ventricosus, subnodosus. Lima tetrica . Janira dentata. Ostrea amara (Maz. Cat. 215. Is. Crestona, entrance of Gulf), Virginica (more pearly than the Atlantic shells, teste Rich). Anomia lampe. Bulimus sufflatus *, excelsus *, pallidior. Physa elata *, aurantia. Patella Mexicana. Acmea atrata, mesoleuca.

Fissurella rugosa, virescena.

Glyphia alta, inæqualia.

Haliotis splendens (three fresh specimens from a resident at San Jose). Callopoma fluctuosum. Uvanilla olivacea. Omphalius rugosus, coronulatus. Nerita scabricosta, Bernhardi. Neritina picta. Crucibulum spinosum, imbricatum, pectinatum, umbrella. Galerus mamillaris, conicus. Crepidula aculesta, onyx, nivea, unguiformis, arenata. Hipponyx Grayanus, serratus, antiquatus. Aletes centiquadrus. Spiroglyphus lituella (on Cr. umbrella). Turritella goniostoma, tigrina. Cerithium maculosum, stercus muscarum. Cerithidea Montagnei. Litorina fasciata, conspersa. Modulus catenulatus, disculus. Cypræa exanthema. Aricia arabicula: Luponia Sowerbii, albuginosa. Trivia sanguinea, radians, Solandri, pustulata, Pacifica. Strombus granulatus, gracilior. Euryta fulgurata. Pleurotoma funiculata, maculosa. Drillia finermis. Conus puncticulatus, gladiator, purpurascens, regularis, arcuatus, nux. Solarium granulatum, v. quadriceps. Cancellaria obesa, cassidiformis, sol.da, goniostoma, ?candida. Natica maroccana, zonaria. Polinices Recluziana, bifasciata, ctia. Neverita patula. Sigaretus debilis. Oniscia tuberculosa. Levenia coarctata. Bezoardica abbreviata. Priene nodosa. Turbinella cæstus. | Fasciolaria princepa.

Leucozonia cingulata. Mitra lens. Oliva porphyria, Melchersi, Cumingii, subangulata. Olivella tergina, gracilis, volutella (several taken alive). Agaronia testacea Purpura patula, biserialis, triangularis, muricata, planospira ‡. Nitidella cribraria. Columbella fuscata, var. Conella cedo-nulli.

Nassa luteostoma, scabriuscula, corpulenta. Pvrula patula. Fusus Dupetithouarsii. Siphonalia pallida. Strombina (Pnew, deep water, San Jose). Pisania sanguinolenta, insignia. Murex plicatus, recurvirostris. Phyllonotus nigritus, brassica, princeps, bicolor. Muricidea dubia.

Lieut. Green having been obliged to pack up his collection and leave home on professional duty, I was not able to make any critical examination of it. Capt. Dupont also, of Delaware, was one of the "Mexican-war naturalists," and made a large collection of La Paz shells during his campaign; but I had no opportunity of seeing them.

Dr. Gould notes the following corrections in Lieut. Green's list, pp. 231-

Semele flavicans should be flavescens. Donax abruptus should be obesus.

50. Kellett and Wood.—The locality-marks, on further study, display still greater inaccuracies.

Nassa Woodwardii, Fbs., Sandwich Islands [is the adolescent state of a very abundant Vancouver and Californian shell. N. mendica, Gld.].

Nassa Cooperi, Fbs., Sandwich Islands. [The type is immature and in poor condition; but it is a rare Californian species, since found by Dr. Cooper.]

Trochita spirata [has not been confirmed from Gulf Cal., but appears in Brit. Mus. from St. Vincent, Cape Verd Is., on the excellent authority of Macgillivray, who did not visit the West Coast. The Cumingian specimens were from K. and W.; but the "spirata, var.," from Magellan and Peru, are simply turrited forms of T.

Chlorostoma aureotincta [= C. nigerrima (Gmel.), Mus. Cum.; but it is unlikely that Gmelin knew the species. It is not quoted by Desh. (Lam. ix. 157): but the Trochus in fauce nigerrimus, Chemn. f. 1526, = T. melanostomus, Gmel., is a

Margarita purpurata et Hillii [are South American shells].

Purpura analoga [is the rough irregular form of P. canaliculata = decemcostata].

" fuscata, Fbs. [of which one brown and one whitish specimen (immature) are preserved in the Brit. Mus. as types, is the large, smooth, rather elevated var. of saxicola. It belongs to the Vancouver district].

Prepura, like decem-costatus and Freycinetii [is the normal state of saxicola. The banded smooth var. is named in Brit. Mus. "P Buc. striatum, Martyn, Un.

Conch. no. 7," but does not agree with the figure].

Furus Kellettii. [This Siphonalia, after long remaining unique in the Brit. Mus.

Col., has been twice confirmed from the San Diegan district by the Smithsonian Dr. Cooper's living specimen is 6.25 in. long; and one specimen collectors.

was dredged by A. Ad. in the seas of South Japan.]

51. Reigen.—The type collection, presented to the Brit. Mus., contains about 8900 specimens. The first duplicate series, containing about 6000 shells, was presented to the State of New York at the urgent request of Dr. Newcomb (well known for his researches in Achatinella, made during his professional residence in the Sandwich Islands), and is arranged in the Albany Three other typical series were prepared for the Museums of Paris, Berlin, and St. Petersburg, and offered on the same terms, viz. that they should be arranged by the author, and preserved intact for the free use

I Dead shells at La Paz; two fresh specimens in deep water from San Jose; ditto, Lieut. Green.

of students; but the donations were severally declined by the respective governments. They have since been offered to the Museums of Harvard University, Cambridge, Mass.; M'Gill University, Montreal, C. E.; and the Smithsonian Institution, Washington, D. C.; and accepted on the same conditions . The writer of the Brit. Mus. Catalogue spared no pains in his endeavours to verify the previously described species of Prof. C. B. Adams; yet a subsequent comparison of types has developed very unexpected coincidences. Those who will take the trouble to compare the two diagnoses in the synonyms now given will add one to the many proofs of the uncertainty of the senses in observation, and the inaccuracy of language in description. The following corrections and additions should be made to the list in the British Association Report, pp. 243-264.

18. Parapholas acuminata is united to P. calva by Tryon, Mon. Phol.

23. The specimens obtained from Madagascar by Sir E. Belcher in the Voy. Samarang appear ab olutely identical.

24. Petricola robusta. The West Indian form of this species is the Choristodon

typicum of Jonas; Mus. Cum.

35. Sphænia fragilis is perhaps S. luticola, Val. 38. Solecurtus politus? = S. Carpenteri, Dkr.

40. Should be Semele flavescens, Gld.

41. Semele ?venusta should be S. bicolor, C. B. Ad. Panama. C. S. Lucas.

46. Should be Sanguinolaria miniata, Gld., as in first Report.

48. Should be Tellina purpurea, Brod. & Sby., teste type in Mus. Hanl.

49. = T. pura, Gld., nom. prior.
54. Quite distinct from Tellina alternata, Say.
56. Tellina ?eburnea proves to be the type of a new generic form. probably belonging to Kelliade, viz. Cycladella papyracea. A perfect specimen, since

found, is in Mr. Hanley's collection.

65. Tellidora Burneti is not L. cristata: v. antea, p. 528.

66. = Strigilla fucata, Gld. (not miniata). Specimens received from different stations on the Pacific Coast vary very greatly in colour and markings.
68. The fragment of "?? Psammobia" is perhaps part of a Lepas-valve.
71 and 72. The names of these shells have been altered and re-altered in Mus.

- Cuming, as will be seen by comparing Brit. Mus. Maz. Cat., p. 43, with the note, p. 548, and with the present arrangement. Mr. Hanley states that no. 72, D. culminatus, Cpr., is his true carinatus; therefore 71, D. carinatus, Cpr., and of most collections, must stand as D. rostratus, C. B. Ad., teste type-valve in Mus. Amherst. The two species uniformly retain their distinctive characters.
- 78. Should be Mactrella exoleta = Lutraria ventricosa, Gld., from type.

81. Should be Gnathodon mendicus, Gld. 83. T. Hindsii is distinct, teste Hanl.

- 85. T. argentata, Sby., 1835, = T. aquilatera, Desh., 1839.
- 92-99. The generic name should be Callista.

A few of the duplicate sets having been sent in exchange to one of the principal A tew of the duplicate sets having oven sent in exchange to one of the principal scientific dealers, he advertises a list of species in which he not merely alters the nomen-clasture, giving "Monoceros" cingulatum, "Pollia" insignis (with "Piania" gemmata), "Trochus" olivaceus (with "Imperator" unguis), "Cerithium" montagui (for Cerithidea Montagnes), Cytherea "dione" (for Dione lupinaria), "Astarte" Dunkeri, "Cytherea" Columbiensis, &c., but inserts Californian species ("Ziziphinus filosus," "Cardium "Lichi") of though from the Gulf and adds others not known at all in the West Coast Nutati") as though from the Gulf, and adds others not known at all in the West Coast faunas, as "Columbella lavigata," "Patella plumbea," and "Chiton reticulata." All these, with such shells as Oliva Cumingii, which belong to other regions on the Mexican coast, would be accredited by the reader on the supposed authority of "Carpenter's Catalogue." In these times it appears that naturalists must be content to resemble the dealers in patent medicines, and guard the accuracy of their works! With regard to the Mazatlan collections (now scarce), none can be trusted unless they present an uniroless seal, with the initials of the author.

98. Callista alternata has a very different aspect from the ordinary C. circinata; but several of the Pacific shells affiliate more naturally to the West Indian form.

C. affinis, C. tortuosa, and C. concinna appear to be one species.

100. Sir E. Belcher is confident that he dredged C. petechialis, in deep water, off S. Blas. He has the same confidence in regard to some of the East Indian Circes. At this distance of time, a written locality-ticket would have had more authority.

105. The hinge proves that this species is distinct from the true V. crenifera, Sby. It has been named V. sugillata by Rve., Conch. Ic. sp. 43. It was also brought by Kellett and Wood, and is allied to V. pulicaria.

110. Among the Panama varieties of this very variable species is Venus fuscolineuta. T. grata takes the place of the Californian T. staminea, which is sometimes

erroneously given as a synonym, and is not straminea, as often quoted.

116. It appears that Gouldia (Thetis, C. B. Ad., olim, non Sby. nec H. & A. Ad.) is congeneric with "Circe" minima, not with the Astartids. Prof. Adams's fresh specimens of his G. Pacifica prove to have the Crassatelloid internal ligament, and represent one of the many remarkable forms of that group.

117. Fresh specimens of G. varians, from Cape St. Lucas, have also the internal ligament, and must rank under Crassatella until that genus has been naturally divided.

118. Lazaria Californica. A well-marked group of species from the West Coast. 121. The purple and orange specimens, here treated as the adolescent state of Chama Mericana, are certainly the Ch. echinata of collections, and may possibly - prove a distinct species. A large series sent from Socoro Is. by Mr. Xantus confirms this view; but all the specimens seen are decorticated or incrusted. 121b. This is the Chama Buddiana of C. B. Ad., and probably distinct.

134. The specimens of Cardium graniferum in Mus. Cum., from St. Thomas, W. I.,

appear exactly identical.

136. The specimens from the Pacific coast, some of which are of very large size, have generally a red tinge round the inner margin; as have also the Fiji specimens brought by the U. S. Expl. Exp. In other respects they exactly accord with the W. Indian. The Pacific shells are generally called C. exasperata, Rve., a name first given to the rough Caribbean variety from Honduras, &c.

137. Codakia punctata. This shell also, brought by the U. S. Expl. Exp. from the Fiji Is., is found sparingly along the American shores, and has the same coloured margin.

142. May possibly prove identical with L. bella, Conr., S. Diego.
150. The Lucina orbella of Gould, = Sphærella tumida, Conr., MS., is the northern form; uniformly larger and smoother than Diplodonta semiaspera. This last is fully confirmed from both oceans.

152. "Felania" serricata appears congeneric with Miltha, H. & A. Ad., = Mittrea, Gray, the type of which (M. Childrent) is a Gulf species.
154. Lasea rubra. Mr. J. G. Jeffreys does not consider the Brit. Mus. specimen identical with the British. The Mediterranean specimens are much more unlike. A colony of fresh shells from a burrow at Cape St. Lucas, when examined, under the microscope, side by side with Ilfracombe specimens, did not present even varietal differences. The species also appears on the Californian and Japan coasts. Similar and perhaps conspecific forms are found on most coasts: among them is Poronia Petitiana, Chen. Conch. Ill. p. 2, pl. 1. f. 2; Callao, not rare, *Petit.*156. For this species, *corbuloides*, and other angular forms, the name *Bornia* may be revived in a restricted sense. (A. Ad.)

157, 158. Mr. A. Adams, who is about to make the Kelliads a special study, thinks that these intermediate forms would rank better with Montacuta or Tellimya

166. This is almost certainly = Anodonta glauca, Val.

168. Dr. Dunker renamed this shell M. Adamsianus, P. Z. S. Nov. 1856.

177. The subgenus Adula may be enlarged to include this and other nestling **Lithophagi*, which often adhere by byssus, like Modiola.

178. Liosolenus is quite distinct from Mytilimeria, which appears simply an aberrant form of Lyonsia. Other "Lithophagi" probably rank with it.

180. Area semilis is from W. Africa (not "E. Indies"): one of the many representative species between the two West Coasta. 185. Noctia reversa, Gray.

198. Argina brevifrons, Shy.

This is the young of Barbatia alternata.

191-195 belong to the group Barbatia.

193. = Barbatia Tabogensis, from type.

203. The young of this shell is Avicula libella, Rve. Dr. Gould protests against some of the interpretations here given to his views.

204. The W. American pearl-oyster should stand as M. fimbriata, Dkr. It has been redescribed as M. barbata, Rve.

212. Dr. Gould protests against the Pacific shells being regarded as O. Virginica. Mr. Hanley adheres to his original opinion. Fossils sent from the Sandwich Is. by Mr. Pease (O. Sandwichensis, Pse.) appear scarcely to differ.

214b. The O. palmula appears a distinct species

215. This species is identical with O. no. 384 of C. B. Ad. It may take the name of O. amara from its "bitter flavour."

224. Bulla Adamsi = B. punctulata, C. B. Ad., non A. Ad.

229. Haminea cymbiformis is closely allied to H. virescens, Sby.

239. Siphonaria lecanium. S. maura, Sby., is one of the varieties of this species. The S. palmata may prove distinct. S. ferruginea, Rve., is probably aescribed from the intermediate form.

242. Ianthina striulata. Name given in ignorance of striolata, Ad. and Rve.; and not needed, teste Rve.

245. The Dentalium hyalinum of Phil. is probably the young of D. semipolitum: this species is distinct.

247. The Dent. pretiosum of Nutt. is a northern species; this is most likely D. lacteum, Phil.

248-250. This typical group of Chitonids retains the Linnean name in Dr. Gray's arrangement; and as he first pointed out the generic distinctions in the

family, his judgment is to be preferred.

252-254, 256. These species belong to Ischnochiton, Grav.

255. Lepidopleurus, Risso, has sculptured valves and scaly margin, and is probably synonymous with Lophyrus, H. and A. Ad. The name may be retained for the "Lophyroid" Ischnochiton here described, the peculiarities of which have been confirmed by adult specimens in Mus. Cuming, and by other species.

257. Chiton, H. and A. Ad., = Acanthopleura (Guild.), Gray.
202. = Nacella peltoides, n. s. (described from Cape St. Lucas specimens).
263. The true Lottia pintadina of Gld. (teste figured types) consists entirely of

varieties of A. patina.

265. The "large flat shell" referred-to is Tecturella grandis, Gray, Brit. Assoc. Rep. 1861, p. 137: Tecturella is preoccurelly Stimps. Gr. Manan Invert. It being needful to divide the old genus Acmæa, Lottia may be used for this section. By reviving synonyms as sectional names, when a genus is divided, good names may be retained in a restricted sense, and the burden of a spurious nomenclature lessened. The species is Lottia gigantea (Sby. Gen.).

200. Scutellina naricelloides, Cpr., = Crepidula osculans, C. B. Ad. 280. This should stand as Gadinia stellata, Sby., that name having been given to the normal form, Rep. pl. 7. f. 3a, of which pentegoniostoma, f. 3f, is only an accidental variety.

282. Callopoma Fokkesii=tessellatum, Rve., is the Lower Californian form, and

probably distinct.

283b. = Turbo phasianella, C. B. Ad., non Melaraphe phasianella, Phil.

289. The first name is T. eximius, Rve., P. Z. S. 1842, p. 185; Mke.'s shell bearing date 1850. It appears identical with "Javanicus, Lam.," in Mus. Cum., and is extremely like "speciosus, Japan." Trochus being now generally retained for the Niloticus group, which contains the largest forms, it is best to revive Swainson's excellent name Calliostoma for the "Liziphinus" group. A specific name should not be used for a genus, where a distinctive name has already been accurately described.

1863.

290. Calliostoma M'Andreæ is the normal state, of which C. Leanum is the pale

292. Mr. Pease considers that T. Byronianus represents a Polydonta from the Pacific Islands.

313-316. The non-pearly Liotiæ are Conradia, A. Ad. 322, 323. Mr. A. Adams thinks that the "Ethalia" amplectans is probably the young of "Teinostoma" a., as suggested in Brit. Mus. Cat. p. 253.

S38. Crepidula adunca, Cpr. (non Sby., = solida, Hds., = rostriformis, Gld.). The tropical shell is C. uncata, Mke., = C. rostrata, C. B. Ad., Rve.
S41. Should stand as C. squama: v. note on C. B. Ad. no. S51.
Vermetus churneus, Rve., = V. ?glomeratus, C. B. Ad., non Lam. The note to

Cæcum, Brit. Mus. Cat. p. 314, should read: - "Of a fourth group, Meioceras, three species are known from the Caribbean Sea, one of which is fossil at Grignon. The earliest Crecid is the Eocene genus Strebloceras." Mon. Cæcidæ in P. Z. S. 1858, pp. 413-444.

387. Cerithium irroratum. Gld. (teste type sp. in Mus. Smiths.), is a very distinct East Indian species, = C. obesum, Sby. sen.
388. This is not the C. interruptum of C. B. Ad., Sby., and Mus. Cum. (hodie), which latter is the roughened form of C. stercus muscarum, Val. C. Gallapaginis is the rough form of C. interruptum, Mke. 389. Vertagus should be changed into Rhinoclavis, Swains.; v. note to 289.

391-393. The genus Triforis should be removed to Cerithiopsidæ. The true "Triforis" infrequens of C. B. Ad. is a dextral shell, = Cerithiopsis tuber-culoides, no. 557. The shell here doubtfully affiliated is probably a variety of T. inconspicuus.

398. Literina Philippii = L. ?parvula, C. B. Ad., non Phil., = L. dubiosa, C. B. Ad., nom. prov.

399. = Litorina pullata, Cpr.; described from Cape St. Lucas specimens.

409. Probably = Rissoina firmata, C. B. Ad., + R. scalariformis, C. B. Ad. 411. "Not a Barlecia," teste Jeffr. MS. It seems, however, too closely allied to B. rubra to create a fresh genus for it, unless the animal should display differ-

412, 413. Belong to Fenella, A. Ad. F. excurvata = ? Rissoa inconspicua, C. B. Ad., non Alder.

417. Fresh specimens prove this to be not a dead Hydrobia ulvæ, but a Barlecia. It appears on the Californian coast, as B. subtenuis.

418, 421. Are very similar, and possibly conspecific forms of Cythna, A. Ad.

422. Is a Gemella, teste A. Ad.

426, 427. Belong to Styliferina, A. Ad.

430 et seq. Some of these forms may rank with Gottoina, A. Ad., and thus approach Fossarus.

437. Luponia spurca. This shell is quite distinct from L. albuqinosa, to which it was supposed to belong by Dr. Newcomb. It is probably a ballast specimen.
438. Quite distinct from the Panamic A. punctulata.

445, 446. Cancellariadæ should be removed to Proboscidifera, teste A. Ad. 450-452. Mr. Reeve unites all these species, with several others, to M. varieguta; which is certainly the easiest way of meeting the difficulty.

453. Myurella rufocinerea = T. rudis, Gray, teste Rve.
477. Conus regulitatis = C. purpurascens, var. Most Cones vary in the same manner.
484. Torinia variegata. Mr. Hanley restores to this shell the uncomfortable name of Chemn. (perspectiviuncula), and unites to it areola, Desh. A careful comparison with shells from the Pacific Islands (teste Pease's specimens) proves them to be completely identical. The "specific" names of Chemn., when simply the second word of the diagnosis, can hardly claim precedence.

486. The genera in this family have lately been revised by Mr. A. Adams. A large number of his Japanese groups are here represented. This species

^{*} The generic names here given were assigned by Mr. A. Adams, who kindly examined the figures of the minute Mazatlan shells, all of which have been drawn under the micro-

agrees with Pyramidella, sp. ind., C. B. Ad., no. 293 (not 294), and may be queted as Obeliscus Adamsii.

497, 488. Belong to Lealea, A. Ad.

4-9. I a Syrnola, A. Ad.

492. The peculiar appearance of the apex is due to decollation, as proved by the discovery of an adolescent and several adult specimens. It probably belongs to Diala, A. Ad., and = Cingula paupercula, C. B. Ad., no. 253.

408-500. Belong to Miralda, A. Ad. Parthenia quinquecincta = Cingula turritu, C. B. Ad., + Risson notabilis, C. B. Ad.

- 501, 502. Belong to Oscilla, A. Ad. Parthenia exarata =? Cingula terebellum, C. B. Ad. 503-508. The "Odostomoid Chrysallida" probably rank best with Mumida, A. Ad. 512. Chrysallida ovulum=? Cingula inconspicua, C. B. Ad.; non? Rissoa inconspicua, C. B. Ad. nec Alder.
- 513-515. Are Pyrgulina, teste A. Ad. The Japanese species, however, seem more like Parthenia, no. 497.

517. Is a Styloptygma, A. Ad.

- 520. This is not the Chemnitzia similis of C. B. Ad.; and is probably a variety of Ch. Panamensis.
- 523. = Chemnitzia affinis, C. B. Ad., pars: pars = Ch. undata, no. 531.

535. Is perhaps a Mormula, A. Ad.

545. The various shells grouped under Achie require revision. Comp. Onoba, A.Ad., and Ebala, Gray, which is figured as Aclis in Add. Gen. 549. Ranks best with Eulimella.

550. This is not Leiostraca recta, C. B. Ad., and may be called Muc onalia involuta.
551. This is not L. solitaria, C. B. Ad., and may be called L. producta.

552. = Mucronalia solitaria, C. B. Ad.

- 5-3. Ranks best with Eulima, teste A. Ad. 5-55. L. retexa; distinct from L. iota, C. B. Ad.
- 556. Should be Eulima, teste A. Ad.

Vide note to 393.

563. Belongs to the subgenus Seila, A. Ad.

568. Scalaria raricosta is perhaps the young of S. Elenensis.

569. S. funiculata and S. diadema, with their congeners, should be removed from Circotrema to Opalia.

570. Dr. Gould dissents from the affiliation of this shell to the West African species on the ground that "he can separate the African from the Pacific shells as fast as we can hand them to him." So easily can any ordinary natural:at separate conspecific British and Mediterranean specimens, or Mazatlan and Panama specimens. It is not found in the West Temperate fauna; the "var. Californica" being the ordinary type from the Pacific Islands, which is much more entitled to be regarded as distinct than are the West American forms.

572. Is shown by perfect Cape St. Lucas specimens to belong to a natural group of species, resembling flattened, perforated Phasianella, to which the name Eucosmia may be given.

Appears under genus "Lagena, Klein," in Mus. Cuming; the Argobuccina cancellatum, Oregonense, &c., having received a new name, Priene, H. & A.Ad.
 This belongs to Closia, Gray, = Volutella, Swains., non D'Orb.

The names of Klein in his 'Tentamen' and 'Lucubratiuncula,' 1773, are not entitled to precedence (according to the Brit. Assoc. rules), because he evidently did not adopt the Linnean mode of binomial nomenclature. What he calls a "genus" answers more to the modern idea of chapter or section. By chance, some of his names are allowable; but, if used, the genus must be regarded as that of Adams, Gray, Mörch, or other writer who defines it. The following will serve as illustrations of Klein's "genera"—"Sol, Luna, Sella, &c.; Auris, Anas, Tigris, Pes-anserinus, Tuba-phonurgica, Cochlea-lunaris, Cochlea-calata, &c.; Buccinum-lacerum, Buccinum-muricatum, Thema-musicum, &c.; Cutreum-imbricatum, Ostreum-muricatum, Buc.; Musculus-latus, Musculus-mammarius, &c.; Cutreum-imbricatum, Cochlea-calata, Tellina-virgata, &c.; Concha-longa-biforis, Concha-longa-uniforis; Concha-rριλοβος; and, in p. 167, "Musculus-polylepto-ginglymus," under which remarkable generic name is given as the first species "Arca-Now." According to the now fashionable transformation of malacological nomenclature into a branch of archeological research, under pretence of justice to ancient writers, the hitherto universally understood 592. Oliva intertincta is very close to the young of O. subangulata, but differs in the chestnut stain on the columella. I have not been able to compare it with the young of O. Cumingii.

594. Is an abundant species in the Eastern Islands, occasionally seen in West Coast collections.

595. Belongs to Anazola, Gray. The remaining Mazatlan species of Olivella are now called Olivina, Gray.

598. Olivella aureocincia = Oliva pellucida, C. B. Ad., non Rve. 599. Olivella inconspicua, C. B. Ad., is probably the young of the colourless var. of O. gracilis, which must be excluded from the synonymy of O. dama, no. 600.

606. The figure of Purpura biserialis, jun., Brit. Mus. tablet 22:32, is stated by Mr. A. Ad. to represent the genus Sinusigera, D'Orb., = Chelicropis, Fbs.; just as Macgillivrayia is the young of Dolium.

611. Rhizocheilus mux+R. distans, Cpr.

612. The young of Vitularia salebrosa is named Fusus lamellosus, Hds., in Brit. Mus., and is also the "Ranella triquetra" of Nuttall's collection.

618. Is probably C. baccata, Gask., in Mus. Cum., though Mr. Gaskoin regarded it as new. The var. obsoleta, 618b, is probably C. galaxias, Rve. 619-622. These shells may perhaps be better studied under Daphnella. 631. Certainly = N. gemmulosa, C. B. Ad.

633. Nassa crebristriata may rank as a var. under proxima, C. B. Ad., which is probably itself a var. of versicolor.

639. This aberrant group of forms is now transferred to Cantharus in Mus. Cuming.

Perhaps they rank better with Siphonalia, A. Ad.
653. Anachis rufotincta ("new," teste Gaskoin) is probably = Col. diminuta, C. B.
Ad., in Mus. Cum., but scarcely agrees with the diagnosis, nor was the accordance noticed in the Amherst types. 659. = P. elegans, Gray, in Griff. Cuv. pl. 25. f. 2. (1834.)

The following species, since found, must be added to the catalogue of the Reigen Collection. The specimens are deposited in the British Museum. The descriptions of nos. 693-695 appear in the appendix to the Brit. Mus. Cat.; the remainder are ready for the press.

704. Cellepora areolata, Busk. On Omphalius ligulatus. 705. Membranipora l'Flemingii, Busk. ", ",

707. Dactylina=C. B. Ad., Pan. no. 516. Obtained from M. Reigen, at Mazatlan, by Major Rich.

693. Lyonsia, sp. ind., 1 sp. 694. ? Montacuta chalcedonica, 1 sp.

706. Montacuta obtusa, n. s., 2 sp. Congeneric with 157, 158.

695. Crenella, sp. ind., 1 sp.

690. Pectunculus, sp. ind., 1 sp.
697. Cylichna Carpenteri, Hanl., P.Z. S. 1858, p. 543, 1 sp.
698. Scissurella rimuloides, n. s., 1 sp.
699. Vitrinella ornata, n. s., 1 sp.
690. Vitrinella tensisculuta, n. s., 1 sp.

700. Vitrinella tenuisculpta, n. s., 1 sp.

701. PVitrinella, sp. ind., fragment.

702. Mangelia sulcata, n. s., 1 sp.

703. P. Torinia, sp. ind., 2 sp.

708. Malea ringens. Obtained from M. Reigen, at Mazatlan, by Major Rich.

53. Jay's Catalogue.—Mr. Hanley states that after the return of Prof. Nuttall, his duplicates were bought by the elder Sowerby, who sold part to

designations of Lamarck, &c., must give way to such names as the above; and if some other 'Attempt' or 'Little Lucubration' of a year's earlier date should be disinterred from now-fortunate concealment, the most modern 'Guides' and 'Books of Genera' will have to be re-written. Klein's idea of Argoduccinum appears to have been that of a "Spotted Whelk," probably Ranella argus. Argoduccinum, H. and A. Ad., may stand as defined in their 'Genera' for the thin ventricose Tritons. They have, however, divided the species between Priene and Lagena.

Dr. Jay, and part to Mr. Stainforth. The specimens in Mus. Cum. were received from Dr. Jay; those in Mus. Hanley from Mr. Stainforth. In the third edition of Dr. Jay's Catalogue, 1839, appear the following species which have not been identified, and localities not confirmed.

Tellina rosca, Lam. California. [Perhaps Sanguinolaria miniata.]
 Pecten tumidus, Brod. Upper California.

37. Chiton incarnatus, Nutt. Chiton textilis, Conr. 38. Patella plicata, Nutt. 40. Fissurella pica, Nutt. " 41. Crepidula squamosa, Brod., Bulla Californica, Nutt. " " 68. Natica variolaris. California. 70. Trochus Californicus, Nutt. Upper California. 72. Monodonta fusca, Nutt. 73. Marmorostoma planospira, Nutt., Litorina iostoma, Nutt. Litorina maculata, Nutt 79. Melongena occidentalis, Nutt. 80. Murex sercostatus, Brug. ,86. Monoceros plumbeum, Kien. "

87. Buccinum Boysii, Nutt. 54. C. B. Adams.—After arranging the duplicate Reigen Collection in the State Museum at Albany, New York, I proceeded to Amherst, Mass., to study the type-collection from which Prof. Adams's book was written. The result is embodied in a "Review of Prof. C. B. Adams's 'Catalogue of the Shells of Panama,' from the Type Specimens," written for the Zool. Soc. in Jan., and published in the Proceedings for July 1863, pp. 339-369. In this paper the synonymy between the Mazatlan and Panama Catalogues is pointed out, and the species assigned to the modern genera. The following are the principal corrections needed in the list, Rep. pp. 267-280. The results in the succeeding paragraphs, pp. 280, 281, should be altered accordingly. (M.=Brit. Mus. Maz. Cat.)

3. Ovula neglecta=arena, var.

8. Cypræa punctulata; quite distinct from C. arabicula.
11. Cypræa rubescens, C. B. Ad., = T. sanguinea, dead.

15. Marginella sapotilla, C. B. Ad., is perhaps a large form of sapotilla, Hds. is destitute of the sharp posterior labral angle seen in the West Indian specimens of carulescens

83. Oliva araneosa, C. B. Ad., = O. Melchersi, M. 591

35. Oliva pellucida, C. B. Ad., = O. aureocincta, M. 598, dead. 40. Oliva venulata, C. B. Ad., = O. angulata, jun.

43. Nassa canescens = dead sp. of N. pagodus

50. Nassa pagodus, C. B. Ad., = decussata, Kien. [? non. Lam.] = acuta, M. 625.

 51. Nassa Panamensis has the operculum of Phos and Northia, = exilis, Pws.
 52. Nassa proxima + 54 N. striata, C. B. Ad. [non Mus. Cum. = N. paupera, Gld.], + N. crebristriata, M. 633, are probably vars. of N. versicolor.

53. Nassa scabriuscula, C. B. Ad., + 58 N. Wilsoni = N. complanata, Pws.

70. Purpura foveolata, probably = worn sp. of Cuma costata, M. 610.
74. Purpura osculans + Rh. Californicus + Rh. distans, are probably vars. of Rhizo-

81. Columbella costellata, C. B. Ad., = Anachis scalarina, Sby. 98. Columbella parva, C. B. Ad., = dead sp. of Anachis pygmæa. 103. Columbella tessellata, C. B. Ad. (non Gask.), = A. Guatemalensis, Rve.

110. Cassis abbreviata can scarcely be distinguished, in some of its many varieties from the Texan Bezoardica inflata.

154. Cancellaria affinis scarcely differs from C. urceolata, M. 445.

- 160. Cancellaria rygmaa = C. goniostoma, jun., no. 157, = M. 440.
- 164. Pleur toma atrior = Drillia v. Melchersi, M. 461.
- 100. Pleurotomu discors, C. B. Ad., is probably a finely developed var. of D. alerrima.
- 182. Pleurotoma rustica, C. B. Ad., = worn specimens of D. Melchersi, no. 164. 191. Mangelia neglecta, probably = M. acuticostata, M. 473. 194, 195, 201 belong to Cerithiopsis.

- 196. Cerithium famelicum must stand for the West Coast Uncinoids, M. 383; the Cumingian shell, and two out of ten in the type-series, belong to C. mediolæve, M. 382.
- 198, 199, 200 are various forms of C. stercus muscarum, Val.; quite distinct from C. interruptum, Mke., and C. irroratum, Gld.
- 203. Does not correspond with the diagnosis, and must stand as Chrysallida paupercula, a very distinct species.
- 208. Is scarcely a variety of Triforis alternatus, no. 207.
- 209. Both the specimens are dextral, = Cerithiopsis tuberculoides, M. 557.
- 210. Turritella Banksii, C. B. Ad. (non Rve.) = T. goniostoma, jun., M. 379. 217. A dead, stunted specimen of Cacum undatum, M. 371.
- 220. Chemnitzia acuminata is a very broad but typical species; not Chrysallida. 221. Chemnitzia affinis, Mus. Cum. and M. 523, has sufficient correspondence with
- the diagnosis; but the type=Ch. undata, M. 531.

 hemnitzia clathratula. The type-series contains Chrysallida clathratula, 222. Chemnitzia clathratula. M. 513 and Mus. Cum., + Chr. communis + Chr. effusa, M. 510, + Dunkeria subangulata, M. 537.
- 223. Chemnitzia communis, the type of Chrysallida, M. 507, Cpr. (vix A. Ad.). The type-series also contains Chr. effusa + Chr. telescopium, M. 508, + Dunkeria subangulata, + ?do. var.
- 225. Chemnitzia major ranks with Dunkeria.
- 227. Chemnitzia Panamensis contains also Ch. Adamsii, M. 519, + Ch. ? gracillima, M. 530,
- 228. Chemnitzia similis, like aculeus; differs from Ch. Psimilis, M. 520, which perhaps = Panamensis, var.
- 230. Chemnitzia turrita=251, "Rissoa, sp. ind."
 231, 235, 237, 238. These species of "P Litorina" belong to Fossarus.
- 233. Litorina atrata + (adult) 257, l'Adeorbis abjecta, are the same (variable) species of Fossarina, A. Ad.
- 239. Litorina parvula, C. B. Ad. (non Phil.), = L. Philippii, M. 398.
- 244. Rissoa firmata+(jun.) 250, R. scaliformis=Rissoina, sp. M. 409.
 246. P.Rissoa inconspicua, C. B. Ad. (non Ald.), does not accord with the diagnosis, but is identical with Alvania tumida, M. 414.
- 249. Rissoa notabilis + Cingula ? turrita belongs (with 252 and 254) to another suborder, = Parthenia quinquecincta, M. 408. 252. P.Cingula inconspicua = Chrysallida ovulum, M. 512.
- 253. Cingula paupercula=? Odostomia mamillata, M. 492, = Diala.
- 254. Cingula terebellum = Parthenia exarata, M. 501. 261. Vitrinella minuta. The original type accords better with Ethalia. 266. Vitrinella regularis is also an Ethalia.
- 269. Vitrinella valvatoides. Probably an Ethalia.
- 270, 271. Are apparently vars. of Solarium granulatum.
 272. May be distinguished as Torinia rotundata, from its great superficial resemblance to Helix rotundata.
- 275. Trochus Leanus is a pale var. of Calliostoma M'Andrew.
 276. Trochus lima can scarcely be distinguished from C. Antonii, Mus. Cum., dredged in the Japan seas by Mr. A. Adams.
- Trochus lividus, C. B. Ad., = Modulus disculus, M. 403.
- 280. Trochus reticulatus = Omphalius viridulus, M. 202
- 281. Turbo Buschii, C. B. Ad., = Uvanilla inermis, M. 287, = T. variegatus, Gray, MS. The true U. Buschii is coloured outside like U. olivacea, but in Brit. Mus. with a white base like *U. inermis.* St. Elena, Hds. in Brit. Mus. 282. Turbo phasianella, C. B. Ad., is probably the perfect form of Phasianella, ?var.

striulata, M. 283b. Its operculum proves it to be a true Phasianella, and not Melaraphe phasianella, Phil., of Add. Gen.

283. Turbo rutilus, the worn remains of what perhaps was once Pomaulax undosus, brought in ballast from Lower California

249. Scalaria, sp. c,= Omilia funiculata, jun., M. 569. 290. Fulima [Leiostraca] iota appears distinct from L. retexta, M. 555. 292. Fulima [Mucronalia] so itaria=Leiostraca, sp. a, M. 552.

293. Pyramidella, sp., = Obeliscus Adamsii, M. 486. 206. Natica lurida, C. B. Ad., = pale var. of N. maroccana.

297. Natica otis, C. B. Ad. (non Br. and Sby.), = Polinices "Salangonensis," C. B. Ad.,

no. 298. 299. Natica Souleyetiana, C. B. Ad., closely resembles N. maroccana, with larger

umbilicus. 300. Natica virginea, C. B. Ad., +302, N., sp. ind. b, = Polinices uber, M. 576.

301. Natica, sp. a, = maroccana, var. unifusciata.

318. ?? Truncatella dubiosa is probably a Paludinella.

321. Bullu punctulata = B. Adameii, M. 224. 322. Bulla, sp. = Tornatina carinata, M. 223.

323. Vermetus ?glomeratus, C. B. Ad., = V. eburneus, Rvo., M. 354. 334. Vermetus Panamensis, C. B. Ad., = Aletes centiquadrus, M. 352. 325. Stomatella inflata is a Lamellaria.

326. Hipponyx? subrufa, C. B. Ad., = H. Grayanus, jun., M. 350, +?barbatus, jun. 327. Hipponyx?barbata, C. B. Ad. The type-series contains H. barbatus, M. 349, + H. Grayanus + Discina Cumingii, M. 14 (valve).

330. Calyptræa aberrans is a valve of Anomia.

331. Calyptrees aspersa = Galerus conicus, broken, worn, and young; one sp. may be mamillari+.

333. Calyptræa conica. Most of the specimens are G. mamillaris, = 340, G. regularis; but a few may be the true G. conicus, worn, M. 332.

338. Calyptræa planulata is a young flat C. cepacea.
342. Calyptræa Plunguis, C. B. Ad., = Crucibulum spinosum, jun.
343. Crepidula cerithicola = C. onyx, jun., M. 340, + C. incurva, jun., M. 339.
349. Crepidula squama. Some of the young shells belong to C. onyx; one perhaps to C. incurva.

350. Crepidula unguiformis. Some of the specimens belong to this species; others to C. nivea.

351. Crepidula nicea. The type-specimens are small, poor, and rough, of the var. striolata, passing into Lessonii. Perhaps, therefore, the first name squama should be retained for the species (nos. 348, 349, 350, part, and 351), leaving striolata and Lessonii for the vars

352. Crepidula osculans belongs to another order, = Scutellina navicelloides, M. 209.

353. Crepidula rostrata, C. B. Ad., Rve., = C. uncata, Mke., M. 338; and is perhaps

distinct from C. adunca, Sby., = solida, Hds., = rostriformis, Gld.

357. Fissurella microtrema. Dead shells, of which part = V. rugosa, var. M. 278.

358. Fissurella mus. Intermediate between Glyphis inequalis, M. 279, and var.

pica.
361. Fissurella virescens. Intermediate between F. v., M. 271, and F. nigropunctata, no. 359.

366. Siphonaria ?pica, C. B. Ad. Young dead limpets [?Acmæa].
367. Lottia ?patina, C. B. Ad. [non Esch.], may stand, until more specimens have been collated, as Acmæa (?foccata, var.) filosa.

368. Lottia, sp. ind. a, may be quoted as Acmes (Pfloccata, var.) subrotundata.
369. Lottia, sp. ind. b, may rank, for the present, as Acmes (Pvespertina, var.)

371. ? Patella, sp. ind., resembles P. vulgata, but may be an Acmea.

372-376. There was no opportunity of dissecting the Amherst Chitons; but among the remaining duplicates of the collection (all of which were obtained and brought to England) were the following:—

573. Chiton dispar, C. B. Ad. (" non Sby.), including Lepidopleurus Adamsii and

var. and L. tennisculptus.

375. Cuton pulchellus, along with Ischnochiton Elenensis, and Pvar. expressus.

370. Chiton Stokesii. Sent as C. patulus by Mr. Cuming.

- 377-379. Probably vars. of An: min tenuis (non lampe).
 380, 381. Ostrea, sp. ind. a and b, a peculiar corrugated species, which may stand as O. Panamensis.
- 382. Ostrea, sp. ind. c, resembles O. rufa, Gld., MS. (not Lam. in Deless.), not Columbiensis.
- 383. Ostrea, sp. ind. d, more like the Gulf Mex. shells than O. Virginica, M. 212.
- 384. Ostrea, sp. ind. e, may stand as O. amara. The "small var." is O. concha-phila, M. 214.

386. Spondylus, sp.,= Plicatula penicillata, M. 210.
383, 384. Perna, sp. a, b,= I. Chemnitzianum. The Jamaica conspecific shells are labelled "bicolor, Ad."
396. Pinna tuberculosa, C. B. Ad., probably=P. maura, jun.

- 398. Lithodomus, sp., includes L. aristatus, M. 176, L. attenuatus, M. 178, and
- L. Ppiumula, jun., M. 175.
 399. Modiola semifusca, C. B. Ad., = M. Braziliensis, M. 171. More like the Atlantic shells than are those from Gulf Cal. A specimen, undoubtedly from N. Zealand, is pronounced conspecific by Mr. Cuming
- 400-404. Modiola, sp. ind., contains M. capax, M. 170, Myt. multiformis [= Adamsianus, Dkr.], M. 168, several vars., and Adula cinnamomea, var. M. 177.
- 405. Chama Buddiana (in poor condition) = Ch. (Pfrondosa, var.) fornicata, M. 121 b.
- 408. Chama ?corrugata, small valve; large one ? = Ch. Mexicana, reversed.
- 407. Chama echinata, C. B. Ad., ? = Mexicana, jun., + Buddiana, jun.
- 414. Arca ? aviculoides, C. B. Ad., appears a young Scapharca.

419. Arca pholadiformis = Barbatia gradata, var.

- 422. Arca similis, scarcely a variety of A. tuberculosa, no. 425.
- 432. Cardium planicostatum, C. B. Ad., may be a worn valve of Hemicardia biangulata, but more resembles a ballast specimen of the W. Indian H. media.
 435. Venus? amathusia, C. B. Ad., = Anomalocardia subimbricata, M. 113

- 436. Venus discors = Tapes grata, M. 110, var., + T. histrionica, M. 109.
 442. Venus, sp. b, = Chione sugillata, Rve. (=!crenifera, M. 105).
 450. Gouldia Pacifica, M. 116, does not belong to the Professor's genus, but is a form of Crassatella.
- 451. Cyrena maritima. "The discovery of Cyrena in brackish water is a fact of some importance to geologists, which was duly appreciated by D'Orb." (T. Prime, in Ann. Lyc. N. Y. 1861, p. 314.)
- 457. Donax rostratus, C. B. Ad. (non Gld., MS., and from it Cpr. in M. Appendix, p. 549), teste type-valve=D. carinatus, Mus. Cum. olim, and from it M. 71; non D. carinatus, Mus. Cum. hodie, and type, teste Hanl., = D. culminatus, M. 72.

Tellina cognata = Psammobia casta, Rve., teste Cuming.

465. Tellina felix. The affiliation of this shell to Strigilla fucata, Gld., MS., was doubtless due to an accidental error in labelling. No. 476 is the same species, dead.

468. Tellina puella. Resembles T. felix, not ?? puella, M. 50.

- 471. Tellina simulans. The type-valve exactly accords with the Professor's W. Indian specimens.
- 473. Tellina vicina, C. B. Ad., = versicolor, C. B. Ad., MS. on label. Larger than most W. Indian specimens, which exactly accord with the Acapulcans, and are varieties of *Heterodonax bimaculatus*. The Panamic shells resemble the Lower Californian, which are Psammobia Pacifica, Conr.

477. Petricola cognata. Perfect specimens are P. pholadiformis, teste Cum.

478. Saxicava tenuis, Sby., C. B. Ad., H. and A. Ad., = Petricola tenuis, H. and A. Ad. Gen. pp. 349-441, and better accords with the latter genus.

479, 482. Cumingia coarctata = lamellosa, var. M. 42.

480, 481. Cumingia trigonularis, M. 43.

483. Cumingia, sp. c, = M. 45, and, if not described, may stand as C. Adamsii. 484. Cumingia, sp. d, = M. tablet 107, p. 31.

485. Amphidesma bicolor = Semele Prenusta, M. 41 (non A. Ad.).
487. Amphidesma proximum, probably = 486, ellipticum, var.: not Semele proxima,
M. 40, = S. Jarescens, Gld., M. p. 548.
489. Amphidesma striosum, re-embles Semele pulchra, no. 488.

491. Amphidesma ventricosum. Scarcely perfect enough to distinguish the genus. The valve outside resembles Macoma solidula.

497. Anatina alta. A valve of Periploma; probably one of the Gulf species.
498. Pandora cornuta, named and described from a fractured growth; resembles Clidiophora clariculata. 499, 500 are varieties of the same species of Azara, of which perhaps no. 501 is an

extreme form. 506. Corbula rubra = C. biradiata, jun., no. 503, M. 31. No. 509 are dead valves

of the same, = C. polychroma, Cpr. 508. Corbula, sp. a, resembles C. pustulosa, M. 32.

510. Solecurtus affinis, probably = S. Caribbaus = Siliquaria gibba, Spengl., S. I. Check-List, no. 222. The W. African specimens are affiliated to the same species by Mr. Cuming. The Mazatlan shells, M. 37, have a different aspect, but closely resemble the Ariquibo specimens in Mus. Amherst.

511. Solen rudis is named Solena obliqua, Spengl., in Mus. Cum. It appears identical with Ensatella ambigua, Lam., as figured by Deless.; but S. ambigua (Lam.), Swains., is slightly different, and better agrees with the dead valves of "S. medius, Alatska," in Brit. Mus. These may, however, be only ballast-valves. As S. ambigua, Lam., was described from America, and the form is not known elsewhere, it probably represents the Panamic shell.

515. Pholas, sp. a, = laqueata, teste Cum.

516. Pholas, sp. b, closely resembles Dactylina dactylus; also La Paz, teste Rich.

The following species were collected by Prof. Adams, but do not appear in his Catalogue; they were found either mixed with others in the Amherst Museum or in the shell-washings of his duplicates*.

518. Mumiola ovata.

519. Chrysallida effusa.

- 520. Chrysallida telescopium.
- 521. Chrysallida fasciata.
- 522. Chrysallida, n. s.
- 523. Leiostraca retexta.
- 524. Fulima yod.
- 525. Volutella margaritula.
- 526. Cæcum semilæve.
- 527. Cæcum subquadratum.

- 528. Cæcum clathratum.
- 529. Lepidopleurus tenuisculptus.
- 530. Ischnochiton Elenensis.
- 531. Cerithiopsis, n. s.
- 532. Lucina capax.
- 533. Kellia suborbicularia.
- 534. Sphænia fragilis. 535. Tellina laminata.
- 536. Crenella inflata.

55. British Museum Catalogues.—To the list of Deshayes, Cat. Venerilla, nly be added—

Page.
7. Dosinia ponderosa, Gray,=Cyth. gigantea, Sby.,=Venus cycloides, D'Orb. [Gulf] California.

135. Chone callosa [Desh. et auct. Brit.,= Ch. fuctifraga, var., quite distinct from Callista (Amiantis) callosa], Conr.

147. Chione astartoides, Beck, Greenland. [1849. = Tapes fluctuosa, Gld., 1841; teste Gld., Otia, p. 181. Midd.'s figures more resemble V. Kennerleyi, jun.]

The authorities are rarely given for localities quoted in this elaborate work. The same species often occur under different names. The Veneridae

* With regard to the species which have received different designations in the Reigen and Adamsian catalogues, whether those names be retained of which the specimens exist, and have been widely distributed, in accordance with the diagnoses, or whether the prior ones be adopted of which the unique types do not represent the descriptions, is a matter of little moment to the writer of the Brit. Mus. Cat. He spared no pains in making out his predecessor's species before describing his own, and has offered the best attainable list of the parallel forms in the review here quoted. in the Brit. Mus. Coll. have received Deshayes' autograph names, in accordance with this Catalogue, generally on the back of the tablets.

In the Brit. Mus. Catalogue of Volutida *, 1855, Dr. Gray arranges the W. Coast species thus:-

- 7. Lyria (Enæta) Harpa, Adams, 167; Gray, P. Z. S. 1855, p. 61; Hab. Peru, = Voluta Harpa, Barnes, Sby., Conch. Thes. [= Voluta Barnesii, Gray, Zool. Journ. vol. i. p. 511, note.]
- 18 10. Lyria (Enæta) Cumingii, Brod. (loc. cit.). Central America, S. Salvador. Gulf Fonseca.
 - 56. Sailor's Coll.—Pecten ?senatorius may be a form of sericeus, Hds.
- 57. Gould's Collections.—" Planorbis ammon, = Traskei, Les. P. gracilentus ?= Liebmanni, Dkr., or Haldemanni," teste Gld. MS. The collections of Mr. Blake and others will be found under the "Pacific Railway

Explorations," v. posted, par. 98.
58. Bridges.—Some of the species described as new on Mr. Cuming's authority appear, on further comparison, to be identical with those before

? Scrobicularia producta = Lutricola † Dombeyi, Lam.

Strigilla disjuncta appears to the author identical with & sincera, Hanl. ["Quite distinct," H. Cuming.

Lyonnia diaphana = L. inflata, Conr.

Calliostoma M'Andreæ = normal state of C. Leanum, C. B. Ad.

Natica excavata + N. Haneti, Recl., appear varieties of N. Elenæ, Recl., the analogue of lineata, Chemn.

Add Alora ("Trichotropis") Gouldii, H. and A. Ad., P. Z. S. 1856, p. 369; 1861,

- 59. Proc. Zool. Soc.—The following additional synonyms have been observed in the list, Rep. pp. 285-288:-
- Page. 43. Vrnus leucodon + Californiensis [= Chione succincta, Val. 1833].
- 110. Pecten circularis [?=ventricosus, jun.].
 24. Pl. 8. f. 4. (Add) Cumingia similis, A. Ad. N.W. coast of America.
 87. Gena varia, A. Ad. Mindoro, 9 fms., Cuming; Australia; Acapulco, 1850 "
- on the sands, Moffat. [Clearly imported.] 153. Infundibulum Californicum [is a Pacific shell=I. chloromphalus, var.]. 168. Ziziphinus Californicus [= Calliostoma eximium, Rve.]. 1851

- 190. Margarita calostoma [= M. pupilla, Gld., = costellata, Brit. Mus. Col., non Sby.]
- 1853
- 185. Pseudoliva Kellettii, A. Ad. [= Macron (Zemira) Kellettii, Mus. Cum.:
 = Pusio trochlea, Gray, MS. in Brit. Mus. Cerros Is., Ayres].

 316. Chlorostoma funebrale [= Tr. marginatus, Nutt. (non Rve.);= T. mæstus,
 auct. nonnul.; non Jonas]. 1854

- 359. Tellina Mazatlanica [= T. pura, Gld., 1851]. 231. Chiton Montereyensis [= Mopalia lignosa, Gld., 1846:= Merckii, Midd., 1855 1847
 - 231, 232. Ch. Hartwegii and regularis belong to Ischnochiton.

In Donovan's 'Naturalist's Repository,' vol. ii. 1834, p. 61, appears (without authority) "Voluta Dufressii, Don., California, S. America."

† This belongs to a group of species in which the cartilage is semi-internal, intermediate between Scrobicularia (= Lutricola) and Macoma. They are arranged under the former group in Add. Gen. ii. 409, as "subgen. Capsa, Bose." That Lamarckian name being in common use for Iphicaria, Schum., and being also employed for Asaphis and Gastrana, it adds to the confusion to use it for a fourth group. The bulk of Blainville's old genus having migrated to Lutraria and Scrobicularia, his name may be revived for this group not otherwise provided-for. The species was redescribed in consequence of Dondoy: having been left among the true Tellens in Mus. Cum.

1855 2:4. Callopoma depressum [= Senectus funiculatus, Kien.: not American].

The following species appear in later numbers of the Proceedings:-

360. Mytilus Adamsianus, Dkr. [= M. multiformis]. Panama, Cuming. 365. Volsella splendida, Dkr. California.

Dr. Gray, in his claborate article on the Olivida, 1858, pp. 38 et seq., gives O. julieta, Ducl., O. araneosa, Lam., and O. venulata, Lam., as synonyms of Strephona reticularis. Lam.; and quotes as "species (?) more or less allied to it," O. polpasta, Ducl., O. splendidula, Ducl., "O. jaspidea, Ducl., = O. Duclosii, Rve." [?], O. kaleontina, Ducl. (Gallapagos), O. Cumingii, Rve., and Oliva Schumacheriana, Beck, "California: front of pillar-lip brown" [?=0. Cumingii, var.].

For O. volutella, Lam. (including O. razamola, Ducl.), he constitutes the genus Ramola.

For O. undatella, Lam. (including O. ?hieroglyphica, Rve., O. nodulina, Ducl., and O. ozodina, Ducl.), and similar species, he forms the genus Anazola.

The restricted genus Olivella is altered to Olivina, and includes (from the West Coast) O. gracilis, Sby., O. anazora, Ducl., O. tergina, Ducl., O. lineolata =dama, Goodall*; and, in a section, O. columellaris, Sby., O. semisulcata, Grav, and O. zonalis, Lam.

The Californian species, O. biplicata, Sby., = O. nux, Goodall, in Wood, is placed in the genus Scaphula. This is constituted for an animal, "Olivancilla auricularia," D'Orb., on which, in his work on S. America, he figures the shell of O. biplicata (teste Gray). The shell might in some way have become mixed with S. American specimens; but as D'Orb. could not possibly have there observed the living animal, the genus should be restricted to the latter. The shell of O. biplicata is very peculiar, and has not been found south of San Diego. D'Orbigny's genus is Olivancillaria.

- 280. Terebra strigata, Sby., Tank. Cat. Panama, Real Lejos. = Buccinum elongatum, Gray, Wood, = Terebra zebra, Kien., = Terebra flummea,

 - 287. Terebra Salleana, Desh. Mexico [Pubi], Salle.
 302. Terebra Petiveriana, Desh. (Pet. Gaz. pl. 75. f. 5). Panama. Mus. Cum.
 303. Terebra epecillata, Hds. "Probably two species here figured." San

Blas, Mexico.

303. Terebra larviformis, Hds. "Probably two species here figured." St. Elena, Monte Christi.

307. Terebra formosa, Desh. Panama. Mus. Cum.
307. Terebra incomparabilis, Desh. [= T. flammea, Lam., teste Rve., P. Z. S.
1860, p. 450]. Panama. Mus. Cum.

1800, p. 430]. Fanama. Mus. Cum.
308. Terebra insignis, Desh. Panama. Mus. Cum.
428. Spondylus Victorice, Sby., pl. 49. fig. 8. Gulf of California. Mus. Cum.
428. Murex tæniatus, Sby., pl. 49. fig. 3. Gulf of California. Mus. Cum.
370. Leda Taylori, Hanl. Guatemala. Mus. Cum., Taylor.
440. Leda Hindsis, Hanl. P Gulf of Nicopyan Mus. Cum., Hanl., Metc.

1960

448-450. Review of Deshayes' 'Monograph of the Terebridæ,' 1859, by Mr.
Reeve. His synonyms are quoted under par. 62, 'Conch. Ic.'

239 5 Burss fusco-costata, Dkr. California, Mus. Cum. [No autho-

1862 239 rity.] Like B. bitubercularis, Lam.

Many of the names given to the shells in Wood's Suppl. were arbitrarily altered by Dr. Goodall, as the work passed through the press (teste Gray). However, if the first published, they will be allowed the right of precedence.

In the P. Z. S. 1861, pp. 145-181, is the first part of the long-expected "Review of the Vermetida," by Otto A. L. Mörch. The species of the West Coast are arranged as follows:-

Stephopoma pennutum, Par. bispinosa, pl. 25. f. 9-8. | Realcjo, on Callop and Crucibulum. 4. 152

Siphonium (Dendrepoma) megamastum, Mörch, pl. 25. f. 12, 13. "? California; burrowing in Huliotis nodosus, Rve." [Not a Californian 153 5.

Siphonium (Dendropoma) megamastum, var. centiquadra, Mörch.

"= Aletes centiquadrus, var. imbricatus. Maz. ('at. p. 302," Mörch [pon Cpr.]. California, burrowing in Haliotis splendens [a strictly Californian species, not found on the Mexican coast].

154 6. Siphonium (Dendropoma) lituella, Mörch. California; deeply imbedded in Haliotis splendens; Mus. Cum.

? = Stoa ammonitiformis, M. de Serres.

= Spiroglyphus, sp., Cpr., B. A. Report, p. 324. [Found on shells from Washington Ter. to Cape St. Lucas (also Socoro Is., Xantus); but it has not been observed on the Mexican or Central American coast.]

164

177 Var. a. planorboides = Serpula regularis, Chenu. Hab.?—, on ? Margari-tifera. Mus. Cum.

Var. aa. laquearis. W. Columbia, Cuming. Var. β. cinnamomina. W. Columbia, Cuming.

178

Var. y. volubilis, Mörch, pl. 25. f. 18, 10. = Vermetus eburneus, Rve., = V. lumbricalis, Knight. Hab. ?—. Mus. Cum.
Var. 8. volubilis (adulta) picta, Mörch, = Verm. eburneus, Maz. Cut. p. 304. W. Columbia, Cuming; Puntarenas, Oersted, Journ. Conch. viii. p. 30.

Var. c. crassa, Mörch, = Serp. Panamensis, Chen. Ill. pl. 10. fig. 5 = Vermiculus eburneus, Mörch, Journ. Conch. viii. 30. Puntarenas, Oersted. "Fossil at Newburn, N.C.," Nuttall [teste Mörch].

Var. & tigrina, Mörch. W. Columbia, Cuming. 179

On Murex melanoleucus, Mörch. Var. η. castanea, Mörch.

Operculum: W. Columbia, Cuming.
Var. 1, from var. $\delta = Vermetus Hindsii$, Gray, Add. Gen. fig. ?8, a, b. Puntarenas, Oersted.

180

Var. 2, discifer, from var. 5. Puntarenas, Oersted.

Var. 3, from var. 6. Pl. 25. f. 17.

Var. 4, subgranosa, from var. 7. Puntarenas, Oersted.

38. Vermiculus effusus, Val., = "Vermetus e., Val." Chen. Ill. pl. 5. fig. 4, a-c. = Syphonium e., Chen. Man. fig. 2301. "Fig. 4 of Chen. † is 181 from specimen figured in Voy. Ven. as V. centiquadrus."

In the second part of Mörch's "Review of the Vermetidae," 1861, pp. 326-365, occur the following. A portion of the genus Bivonia is united to Spiroglyphus. Petaloconchus, Aletes, and part of Bivonia are united to Vermetus, Mörch (non auct.). The name Aletes appears to be used in a varietal sense, in no respect according with the subgenus as described by the author.

* I was perhaps wrong in referring the Mazatlan shells to Val.'s species; but if Mr. Mörch is right in his own determination, the Mazztlan synonymy and locality must be expunged. There was no evidence of a typical Siphonium when the Reigen Catalogue was published, nor have I seen such from the whole coast, unless the minute operculum h, Brit. Mus. Col., tablet 2537, be supposed the young. Mörch says, "the lid is unknown." The operculum of the similar Mazztlan species, on which the subgenus Aletes was

founded, is described in Maz. Cat. p. 302.

+ "Cpr.'s observations respecting Chenu's plates (Maz. Cat. p. 306, lin. 18) are in part erroneous, it being overlooked that Chenu has two plates marked 'V.':" note *, p. 3...

Spir glyphus albidus, ?Cpr. Mazatlan, Reigen. Operculum g et ?f, Maz. Cat. p. 311. = Bivonia albida, Cpr., Maz. Cat. p. 307. Operc. g is without doubt of Spiroglyphus, and not of Bivonia, var. indentata. Operc. f

is truly congeneric, and perhaps conspecific.

4. Vermetus (Thylacodus) contortus, Cpr. Gulf Calif. Mus. Cum.

Var. n. repens (Thylacodus). Gulf Ca if., on Margaritifera, Mus. Cum.

"This species is perhaps a state of V. (Petaloconchus) macrophray-

345

ma." [Mörch: non Cpr.]†
Var. \(\theta\). \(\theta\). \(\theta\). Calif., on Crucibulum. Mus. Cum.
Var. \(\gamma\). \(\theta\). Contortula (Thylacodus). Gulf of California.

Forma 1. \(\theta\). \(\theta\). Thylacodus contortus, var. indentata, Cpr. "C sponds to forma 1, electrina, of Vermetus varians, Porb."

Var. \(\theta\). \(Var. 8. indentata (Vermetus), [Mörch, non Cpr.]. Sonsonate, on Spondylus limbatus, Rve., non Sby. Oersted.
 Var. c. corrodens (Vermetus). Is. Sibo (Quibo), Spengler, on Pur-

346 pura lineata.

20. Vermetus (? Strebloceras) anellum, Mörch. California, on Haliotis tuber-350 culatus, Rve. [Not a Californian Haliotis. The diagnosis, however, exactly accords with a Californian shell, which is perhaps the young of S. squamigerus. It has no resemblance to Strebloceras, Cpr., P. Z. S. 1858, p. 440, which is a genuine Cæcid.]

21. Vermetus (Macrophragma) macrophragma. Mazatlan, &c. = Petaloconchus 860

m., Cpr. Realejo, Oersted.

24. Vermetus (Aletes) centiquadrus, Val. Puntarenas, Oersted + V. effusus, 362 Val. (the same specimen).

Var. a. maxima = V. Panamensis, Chen. pl. 5. f. 1. Panama, C. B. Ad.; Mazatlan, Melchers.

Var. \$\textit{\alpha}\$. Functis impressis destituta, = \$V\$. Peronii, Val. \$\frac{1}{2}\$ Var. \$\textit{\gamma}\$. Siphonata. Puntarenas, Oersted = \$V\$. Peronii, Rouss. Var. \$\textit{\alpha}\$. Gulf of California, on piece of black Pinna, Mus. Cum. [The Pinna nigrina is from the E. I.] = \$V\$. tulipa, Rouss. Var. \$\epsilon\$. Panama, on Margaritifera, Mus. Cum. 363

The conclusion of the paper is in P. Z. S. 1862, pp. 54-83.

Bivonia sutilis, Mörch. Central America, on Anomalocardia subimbricata, 58 Mus. Cum.

Var. s. ?majw. On Pinna, probably Central America, Mus. Dunker. Var. β. triquetra. Mazatlan, on valve of Placunanomia, Mus. Semper. . .

Like B. triquetra, "var. typica."

Thylacodes cruciformis, Mörch. California, on Crucibulum Pumbrella, Desh., var. Mus. Cum. Analogue of 7, T. Rüssi, Mörch, from the 70 8.

east coast.

Var. s. lumbricella. Voy. Ven. pl. 11. f. 2. California, crowded on Marguritifera. Mus. Cum.

Var. B. erythosclera. Cal., on young Marguritifera. Mus. Cum.

Very like Biv. Quoyi, var. variegata. [This species is on shells from the Mexican, not the "Californian" fauna.]

16. Thylacodes squamigera, Cpr., = Aletes sq., Cpr., P.Z.S. 1856, p. 226. Sta. Barbara, Nutt. [Serpulorbis, not Aletes, teste Cooper].

• Mr. Mörch has not seen any laminge inside, but, from the 3-5 spiral lirge on the columella, believes they will be found. The opercula supposed to belong to this species (Max. Cat. p. 311) Mr. M. thinks more probably those of Spiroglyphus albidus. He states (erroneously) that the shell was not opened by the describer.

† Mörch supposes that Bivonia contorta, Cpr., may be the adult of Petaloconchus macrophragma, and that both may be forms of Aletes centiquadrus. The nuclear portions are, however, quite distinct, and the three shells appear, from beginning to end, as

far removed as any ordinary Vermetids can be from each other.

The writer doubts respecting this species, and thinks the shell on which it is parasitical to be a Melo, and not Strombus gales, simply because named after Peron, who did not visit this district.

Var. a. pennata, = V. margaritarum, Val. Ven. pl. 11. f. 2. (fig. min.), Cal. Mus. Cum. [Affiliated to the Californian species on supposititious evidence, and probably distinct. These appear to be from the tropical fauna.] Analogue of the W. Indian T. decussatus, Gmel.

21. ? Thylacodes oryzata, Mörch. Probably W. Central America, from the adhesions; but "China:" Mus. Cum.

Var. a. annulata. Panama. Mus. Cum. :3

In P.Z.S. 1861, pp. 229-233, is given a "Catalogue of a Collection of Terrestrial and Fluviatile Molluscs, made by O. Salvin, Esq., M.A., in Guatemala: by the Rev. H. B. Tristram." But few of the 49 species occur in Mexican collections; none are identical with W. Indian species, except such as are of universal occurrence in tropical America; and the 16 new species show close generic affinities with the shells of the northern regions of S. America. The shells have been identified from the Cumingian cellection. The new species are described, and some of them figured.

Page.	No.	PL	Fig.	
230	1	• •	• •	Helix Ghiesbreghti, Nyst. The largest Helix in the New World.
• •	2	• •	• •	Helix eximia, Pfr.
• •	8	• •	••	Helix Lalliana, Pfr., var.
• •	4	• •	• •	Helix euryomphala, Pfr. Closely allied to the S. American
				H. laxata.
• •	5		••	Helix coactiliata, Fér.
••	в		• •	Bulimus Pazianus, D'Orb.
••	7		• •	Bulimus Moricandi, Pfr.
	8			Bulimus Honduratianus, Pfr.
	9			Bulimus Dysoni, Pfr.
	10	26	8.	Bulimus semipellucidus, n. s. Allied to B. discrepans, Sby.
• •	11			Succinea Poutris, Ln.
	12			Glandina Ghiesbreghti, Pfr.
• •	13		• •	Glandina Carminensis, Morelet. Described from Costa Rica.
• •	14			Achatina, sp. ind.
• •	15	• •	• •	Achatina octona, Lam.
• •	16	•	• •	Spiraxis Lattrei, Pfr.
	17			Spiraxis Shuttleworthii, Pfr.
231	18			Spiraxis Cobanensis, n. s.
	19		• •	Spirazis, sp. ind.
	20		• •	Leptinaria Emmelinæ, n. s.
• •	21			Leptinaria Elisæ, n. s.
• •	22		• •	Cylindrella Ghiesbreghti, Pfr
• •	23			Cylindrella Salpinx, n. s.
••	24			Physa Sowerbyana, D'Orb.
• •	25		• •	Physa purpurostoma, n. s. Lake of Dueñas.
	26		• •	Planorbis corpulentus, Say.
232	27		• •	Planorbis tunnidus, Pfr. [Comp. P. tumens, Maz. Cat. 238.]
	28	• •	••	Planorbis Wyldi, n. sp. Lake of Dueñas.
• •	29		• •	Planorbis Duenasianus, n. s. Lake of Dueñas.
• •	30	• •	• •	Planorbis, sp. nov., in Mus. Cum.
• •	31	• •	• •	Segmentina Donbilli, n. s. Lake of Dueñas.
••	32		• •	Melampus fasciatus, Chem. Salt-marshes on coast.
• •	33		• •	Adamsiella Osberti, n. s.

^{*} The present posture of binomial nomenclature is well illustrated in this most elaborate paper, which few naturalists have professed to understand. The shell of which the operculum-spine is figured in plate 25. f. 16, is quoted as "Siphonium (Stoa) subcreatum, v. spinosa." The shell described in Maz. Cat. p. 307 is quoted as "Vermetus (Thylacodus) contortus, var. γ. contortula (Thylacodus), forma 1, Thylocodus (?) contortus, var. indentata, Cpr." Pernaps the sentences of Klein and the early writers are more easy to understand and remember. The Chitonida of Middendorff (v. Eirst Report, 214) are simple in coursesien. p. 214) are simple in comparison.

P1. Page. Cistula trochlearis, Pfr. 35 Chredropoma rubicundum, Morelet. Megalomastoma simulacrum, Morelet. Described from Costa Rica. 30 Cyclophorus ponderosus, Pfr. 37 Cyclophorus translucidus, Sby. 38 39 26 11. Macroceramus polystreptus, n. s. 26 9, 10. Helicina Salcini, n. s. Like H. turbinata, Wiegm. Mexico. 40 Helicina amæna, Pfr. 41 Helicina Oveniana, Pfr. Helicina merdigera, Sallé. Described from Nicaragua. 42 43 • • Helicina Lindeni, Pfr. . . • • Helicina chryseis, n. s. Mountain forests of Vera Paz. 45 Paludinella, 8 species apparently undescribed.

Pachycheilus corvinus, Morelet. Larger than in previously • • noted habitata.

The vol. for 1863 contains Dr. Baird's descriptions of new species from the Vancouver collections of Lord and Lyall, which will be tabulated, injud, par. 103; and the Review of Prof. Adams's Panama shells, which has already been quoted.

- 60. Sowerby, 'Conchological Illustrations,' 1841.—The following are additional localities or synonyms:-
- No.
- 56
- 46. Cardium Indicum [is exotic; closely allied to C. costatum].

 18. Cardium maculatum, Sby. Cal., &c. = C. maculosum, Sby. (preoc).

 . Murex imperialis, Swains. Cal. = M. pomum, var. Gmel. [Perhaps distinct; may be the W. I. analogue of bicolor.]

 38. Murex erythrostoma, Swains. Acapulco. [P=bicolor, var.] 80
- 91
- 102. Cypræa albuginosa, Gray. Mexico, Ceylon. [The Ceylon shell is probably poraria, sp. 44.] 45
- 45. Erato scabriuscula, Gray. Acapulco. = Marginella cypræola, Sby.
 40. Fissurella Lincolni, Gray, MS. [An extremely fine specimen supposed "unique") of Glyphis aspera, Esch. Mr. Lincolni salso quoted for the "finest of the four known specimens" of Lucapina crenulata, sp. 19, £ 31, 38: "Monterey."]
- [Erase this line in the former Report, and substitute as follows:—] 54 Bulimus unifasciatus, Sby. Galapagos.
- 'Thesaurus Conchyliorum,' G. B. Sowerby, &c. To the list in Rep. pp. 288, 289, may be added:--
- 23. Pecten circularis, Sby. Cal., St. Vincents. [The name may stand for the W. Indian shell, the Californian being P. ven-Page 51 tricosus, jun.]
- 57 12
- 20, 21. Pecten latiauritus, Conr. Cal. +"P. mesotimeris, Conr."

 144. Tellina sincera, Hanl. N.W. Coast America. [=Panama.] 261 59 165 38-38. Venerupis cylindraosa, Desh. Cal., = Petricola Californica, Corr., 769
- +P. arcuata, Desh., +P. subgloboa, Sby.

 179 59-77. Cerithium ocellatum, Brug. Gulf Cal., &c. = C. irroratum [C. B. Ad. (Gld. MS.); non] Gld. E. E., = C. interruptum [C. B. Ad.: non Mke, nec] Gld.
- 77 Fig. 45, 44. Conus interruptus, Mawe, Wood. [Slender, coronated sp.] non Br. and Sby. Hab.?—
- * Mr. Sowerby remarks, "As the collector's great object is to know the shells, I have preferred, in most cases, giving the species as they stand, stating the alleged differences, and leaving the final decision to individual taste." He further states, with regard to some groups, that "the characters of the shells are very uncertain, and the intentions of the authors still more so." The names, references, and localities are given on lists to face the plates, and the diagnoses separately, with a copious index. An attempt also is made to

8p. 64	Fig.	
	80	Conus tiaratus, Brod. Galaparos.
79		Conus puncticulatus, Brug. Salango, St. Elena, W. Col., Cunding-
••		Conus puncticulatus, var., = papillosus, Kien.
• •		Conus puncticulatus. [Mazatlan.]
•••	392.	Conus puncticulatus, var., = pustulosus, Kien. : ? + Mauritianus, Lam.
.33	190.	Conus virgatus, Rve., = zebra, Sby., non Lam. [Resembles regularis var.] Salango, W. Col., Cuming.
• •	••	Conus virgatus, var., = Lorenzianus, Rve., non Chem.
::-	193.	Conus virgatus, var., = Cumingii.
106	192.	Comus scalaris, Val., = gradatus, Rve. Salango, W. Col., Cuming.
127		Conus incurvus, Brod. [Resembles specimens from La Paz.] Monte Christi, W. Col., Cuming.
180		Conus Ximenes, Gray, = interruptus, Brod., non Mawe. [Like puncti- culatus, var.] Mazatlan, W. Columbia, Cuming.
l57	324.	Conus perplexus, Sby. Gulf Cal., W. Col., Cuming.
84	384.	Conus arcuatus, Br. and Sby. Mazatlan, Pacific [?].
15	26–2 8.	Figurella Mexicana, Sby. Real Llejos, Mexico. Both localities
••	78.	Fissurella Mexicana, Sby. Porto Praya. are probably incorrect; it belongs to the Chilian fauna.]
41	46, 47.	Fissurella rugosa, Sby. W. Indies [= W. Mexico].
83	88, 89.	Fissurella alba, Cpr. [Gulf of] California.
55		Fissurella nigrocineta, Cpr. [Gulf of] California.
56		Fissurella tenebrosa, Sby., jun. [?Gulf of] California. Like the last.
54	80.	Fissurella obscura, Sby. Real Llejos, Cum. ["Gal." in P.Z.S. 1834.]
68		Fissurella excelsa, Rve., + F. alta, C. B. Ad.
86		Fissurella Panamensis, Sby. "In Conch. Ill., this very distince shell is united to that since named F. excelsa, Rve."
115	187–189.	Fissurella cancellata, Soland. St. Vincent's, Honduras Bay, Guadaloup, California. [No authority for the latter.]
. 7	12, 13,	Harpa Rivoliana, Less.,= H. crenata, Swains. Acapulco.
1860.		
2	57.	Dentalium pretiosum, Nutt. "=striolatum, Stn. Massachusetta.
		Less curved and tapering near apex than D. entale, more cylin-
		drical throughout, but a doubtful species." [The type-specimens are not striated.] California.
43	10.	Dentalium hexagonum, Gld. N. America: China, Singapore.
42		Dentalium pseudosexagonum, Desh. Masbate, Philippines: W. Columbia.
8	41.	Dentalium splendidum, Sby. Xipixapi, W. Col.
29	32.	Dentalium liratum, Cor. "Malgattem." [Maz. Cat. 244.]
48	81.	Dentalium liratum, Cpr. "Malgattem." [Maz. Cat. 244.] Dentalium quadrangulare, Sby. Xipixapi, W. Col. [Like tetra-
		gonum, but striated, and much smaller.
40	21, 22.	Dentalium tetragonum, Sby. W. Col. [Young shell square, adult round.]
Tn	the very	elaborate monograph of the Nuculidae, by S. Hanley, Esq., the
	wing spec	ies, quoted as from the W. Coast, are minutely described:—
2	8 3.	Leda Soverbiana, D'Orb. Xipixapi.

St. Leta Sciverouna, D'Ori. Appxapi.
N. elongata, Val.
N. lanceolata, G. Sby., non J. Sby., nec Lam.
Leda Taylori, Hanl., N. lanceolata, Lam., non G. nec J. Sby. Guatemala. (P. Z. S. 1860, p. 370.)
Leda Elenensis, Sby. Panama.
Leda eburnea, Sby., =lyrata, Hds. Panama: Bay of Caraccas. 7

29

classify the forms according to their natural affinities. It is rarely that monographers and artists take such laudable pains to supply the wants of students. In the monograph of Galeonoma and Scintilla, however, the locality-marks have not been observed to a single species, except the "British G. Turtoni" and its "Philippine analogue, G. macroschioma, Desh." This is the more remarkable, as most of the species were described by Desh., with localities, in P. Z. S. 1855, pp. 167-181.

In the 'Malacological and Conchological Magazine,' by G. B. Sowerby, London, 1838, is a monograph of Leach's genus Margarita. The following probably belong to the N. W. Coast, and are figured in the Conch. Ill.:--

Page.

25. Margarita striata, Brod. and Sby. Boreal Ocean.

26. Maryarita undulata, Sby. Arctic Ocean.

23. Margarita costellata, Sby. [Non Brit. Mus. Col. = M. pupilla, Gld.; differs in having the interspaces of the spiral ribs decussated. Arctic Ocean.

26. Margarita acuminala, Sby. Arctic Ocean.

30. Aphrodite columba, Lea, = Cardium Granlandicum.

Several West Coast species were named and figured in the elder Sowerby's 'Genera of Recent and Fossil Shells,' London, 1820-1824; a work of singular merit for its time, but left unfinished. The stock was purchased by a dealer, with a view to completion; but newer works have occupied its place, and the valuable plates and text remain useless in his hands. As no dates appear in the bound copy of the work, it cannot be stated whether the species here named by Mr. Sowerby had been before published. The loss of the original work has been in some respects supplied by the completion of the extremely similar 'Conchologia Systematica,' by L. Reeve, vol. i. 1841, vol. ii. 1842. It might almost be considered a second edition of the 'Genera,' of which some of the plates occur in the quarto form. References are here given to the species reproduced from Sowerby's unfinished work, which is often queted by Mr. Reeve according to the "Numbers" in which it appeared:-

```
Bve.
Fig.
2.
       Bby. Bowerby's Genera.
2. Cumingia trigonularis.
3.
4.
         4. Cumingia coarctata.
         1. Tellina opercularis ["= T. merculata, Gmel., = T. rufescens, Chem.," Rve.].
1. Lucina punctata [Linn., "= Lentilaria p., Schum." Rve. C. S.].
1.
1.
2.
5.
2.
3.
         2,5. Venus subrugosa.
         7. Venus gnidia.
         2. Cytherea planulata.
         3. Cytherea aurantiaca.
4.
         4 [non 3]. Lithodomus caudigerus [Lam., = aristatus, Dillw.].
3.
         3. [Appears to represent attenuatus, Desh.]
6.
         6. Modicia semifusca [inside view; exactly accords with Braziliensis, Max. Cat., but is not Lamarck's species, teste Hanl.].
         2. Lima squamosa [Lam.].
2.
         2. Ostrea Virginica [Lam.].
         1. Placunanomia Cumingii.
                                                    "Brought by Mr. Henry Cuming from the
                 Gulf of Dulce, in Costa Rico."
         1. Lottia gigantea, Grav. Genus named in Phil. Trans. = Patelloides, Quoy and Gaim. ? South America. [The U. S. E. E. specimens were labelled "Valparaiso." It comes to us from many parts of the world, but is only known to live in Middle and Lower California. = Tecturella
1.
         grandis, Cpr., B. A. Rep. 1861, p. 137.

3. Siphonaria Tristensis. [The figure is singularly like the Vancouver.]
                species, S. thersites.]
         2. Crepidula onyx.
             Crepidula aculeata: "= P. auricula, Gmel."
         3. Calyptraea Pextinctorium. [Sby., non Lam. The non-pitted form of
                imbricata.
         4. Calyptræa spinosa.
```

The last Part (no. 34) appeared "March 31, 1831," many years after the previous sues ; teste Hanl. 1863. 47

Sowerby's General Culyptræa imbricata. [The pitted form. Appears in C. S., f. 1, as a C. rugosa, Less." Calyptrea Pepinosa, var. [The flat, smooth form of spinosa. Appears in C. S., fig. 4, as "C. cinerea, Rve., P. Z. S. 1842," p. 50. On a log of wood floating off Cape Horn.] 2. Bulla virescens. Nerita ornata [=scabricosta, Lam.].
 3. Litorina pulchra, = Turbo p., Swains. 4. Litorina varia. Panama. 5. Cerithium varicosum. 9. 1. Cerithium Pacificum. [Closely resembles Potamis ebeninus.]
Fasciolaria aurantiaca [with operc. (non Lam.) = F. princeps, Lam., Rve.].
Murex phyllopterus and operc. [Appears = Cerostoma foliatum. The 9. Cerithium Pacificum. 5. Murex phyllopterus and operc. operc. seems to have been rubbed outside.] 1. Columbella strombiformis, Lam. 2. Columbella labiosa. "California" [i. e., Panama, &c.] 1. Purpura patula [Linn. "= Perdicea nodosa, Petiver, = Cymbium tubercana patulum, Martini." Rve. C. S.]. ī. patulum, Martini."
6. Purpura planospirata. G. 9. Purpura callosa [= Cuma tectum].
3. Monoceros lugubre [= cymatum, Tank. Cat.].
4. Monoceros cingulatum [Lam.: Leucozonia]. 9.0 3. 4. Trichotropis bicarinata, and [Nassoid] operculum.
 Oliva porphyria [Linn., "= Cylinder porphyreticus, D'Arg., = Castra Turcica, Martini." Rve. C. S.]. 1. 5. Cypræa pustulata [Lam.].

The following additional West Coast species, figured in the 'Conch. Syst.,' may be quoted for their synonymy. The authorities for all the species are given, but no localities :-

Pl. Fig. 26 1. Solecurtus Dombeyi, Lam. [appears intermediate between S. Dombeyi,

Solecurius Dombeyi, Lam. [appears intermediate between S. Dombeyi, Mus. Cum., and S. ambiguus, Lam.].
 Turbo squamiger, Rve. P. Z. S. 1842, p. 186 [without locality. 'Galapagos, Cuming,' in Conch. Ic. Also Acapulco, Jewett, &c.].
 Turbinellus acuminatus, Wood, Kien. [closely resembles Latirus castaneus].
 Buccinum elegans, Rve., P. Z. S. 1842, from Hinds's Col. [is the southern, highly developed form of B. fossatum, Gld. The name is preoccupied by a Touraine fossil, B. elegans, Duj., in Desh. An. s. Vert. x. p. 219, no. 22. As Rve.'s species is a Nassa, and there is another Ruc. elegans, Kien., Coq. Viv. p. 50, pl. 24. f. 97, = Nassa e., Rve. Conch. Ic., is will save confusion to allow Gld.'s later name to stand].

238 5,6. Buccinum serratum, Dufr.,= Nassa Northiæ, Gray [= Northia pristis, Desh.].

62. Reeve, 'Conchologia Iconica.'—The following corrections should be made in the abstract, Rep. pp. 289-293.

20. [Semele flavicans should be flavescens, et passim.]

33. Siphonaria amara [is a Sandwich Is. species, quite distinct from C. lecanium]. 38. Patella clypeaster [is a S. American species, having no connexion with A. patina, or with Monterey].

60. Patella cinis [= A. pelta, not patina, var.].
67. Patella vespertina. [P. stipulata, sp. 117, is probably a var. of this species.]
69. Pa'ella toreuma ["var." in Mus. Cum., "Mazatlan," probably=hrescens. No shell of this (N. Zealand) type has been found on the coast by any of the American collectors].

* Sowerby's (correct) name appears on Reeve's plate; but in the text of C. S., f. 9 is called 'a species of Tu, linellus inserted inadvertently."

- 81. Patella Nuttalliana. [Mus. Cum., = A. pelta, typical. The figure looks more like patina.
- 140. Patella mamillata, Nutt. [non Esch., is an elevated, stunted form of the black ? var. of scabra, Nutt. The name being preoccupied, this distinct form may stand as limatula].
- Stand as amatusa.
 Fissurella densiclathrata [is distinct from G. aspera. Sta. Barbara, Jewett].
 Turbo marginatus [Rve., non] "Nutt." [is a Pacific species, quoted by Messrs. Adams as the Collonia marginata of Gray; but that is a Grignon fossil, olim Delphinula (tests type in Brit. Mus.). The Nuttallian shell, published in Jay's Cat., was described by A. Ad. as Chlorostoma funebrale = Chl. mæstum, auct. (non Jonas, the true T. mæstus being S. American, teste A. Ad. and Mus. Cum.)].
 Currage owner [is the E. Indian. C. madices the similar S. Diegan species].
- 39. Cyprosa onyx [is the E. Indian, C. spadicea the similar S. Diegan species].

The following species, either quoted from the W. Coast, or known to inhabit it, or connected with it by synonymy, have been observed in Reeve's 'Conch. Ic.' since the date of the last Report. The number of the species also refers to the figure. For the remarks enclosed in [] the writer of this Report, here as elsewhere, is alone responsible.

- ?Africa, Mus. Cum. [= Siphonalis 56. Fusus turbinelloides, Rve., Jan. 1848.
- pallida, Br. and Sby.; spines somewhat angular].
 62. Fusus cancellatus, Lam. "Unalaska, Kamtschatka, Mus. Cum." [Doubtless
- the origin of the prevalent locality-error].

 76. Fusus Novæ-Hollandiæ, Rve., Jan. 1848. N. Hol., Metcalfe. [As Mr. Metcalfe gave numerous West Coast shells to Brit. Mus. under locality "N.H.," this shell also was probably from W. Mexico, = F. Dupetithonarsii, Kien.

- this shell also was probably from W. Mexico,= F. Dupetithmarsi, Kien.]

 91. Fusus Gunneri, Lov., (Tritonium), Ind. Suec. p. 12. Greenland. [= Trophon multicostatus, Esch. The fig. should be 90, b; f. 91= Bamffus.]

 52. Cardium pseudofossile, Rve. "P. Z. S. 1844." Hab.?— [Not found in P. Z. S.,= C. Californiense, Desh., 1839, non C. Californianum, Conr., 1837. This is the Eastern form; the Californian fvar.= C. blandum, Gld.]

 67. Buccinum modificatum, Rve., Dec. 1848. Hab.?— [Agrees sufficiently we'l with worn specimens from La Paz, Mus. Smiths.,= Siphonalia, closely allied to pallida.]

 62. Buccinum dirum, Rve., Dec. 1846. Hab.?— Mus. Cum. [Worn specimen of Chrysodomus Sitchensis, Midd., 1849,= F. incisus, Gld., May 1849.]

 110. Buccinum corrugatum, Rve., Feb. 1847. Hab.?— ["Truncaria," Cuming, MS. "Pisania," H. Adams. Vancouver, most abundant.]

 2. Sanguinolaria ovalis, Rve., March 1857. Cent. Am. [?= S. miniata, jun. 3. S. tellinoides, A. Ad., is the same, adolescent; 5. S. purpurea, Desh., adult.]

- 3. S. tellinoides, A. Ad., is the same, adolescent; 5. S. purpurea, Desh., adult.]

 4. Psammobia maxima, Desh., P. Z. S. 1854, p. 317. Panama. [Closely resembling Ps. rubroradiata, Nutt. Puget Sound.]

 19. Mytilus palliopunctatus, Dkr. Cal. and Mazatlan. [No authority for Cal.]

 41. Mytilus bifurcatus, Conr., J. A. N. S. Phil. Hab.? [Conr. assigns his Nuttallian species to California; but it is the common Sandw. Is. species, teste Pse. The Californian shell with the same acculature is a Santifar and is the The Californian shell, with the same sculpture, is a Septifer, and is the S. bifurcatus of Mus. Cum.]
- 44. Mytilus Sallei (Dreissina), Recl. Central America. [? On which slope.]
- 52. Mytilus Cumingianus, Recl. Panama. [Septifer.]
- 60. Mytilus glomeratus, Gld. Hab. ?— [Gould's species is from California, but the name is attached to a very different shell in Mus. Cum.]
- * Several species occur in the recent monographs without locality, which are well known to inhabit the W. Coast. This is partly due to the writer not thinking it necesssary to refer to published books for information, and partly to the changes which have of late years been made in the principal authority, viz. the Cumingian collection. By the redistribution of species into the modern genera, the student is greatly aided in his search for special forms; but, for the sake of uniformity, the autograph labels of collectors or describers of species are generally rejected, the names being either in the handwriting of the clerk or from the printed index in the monograph, and representing only the judgment of the latest worker, which may or may not be correct. Synonyms, whether real

11. Modiola capax, Conr. Galapagos, Cuming. [Lower] California, Nuttail.

Mazatlan, Carpenter. [Reigen is the authority for the shells described in the Maz. Cat., not Cpr.]

17. Modiola Braziliensi, Chem. "Brazil." [At f. 31, which appears the true

Brazilian shell, we are informed that this specimen is a "variety from Guayaquil."

Modicia nitens, "Cpr. Cat. Reigen Col. Brit. Mus. California." [The shell was erroneously described as from "California" in P. Z. S., and does not appear in the Reigen Mazatlan Cat. := M. subpurpureus, Mus. Cum.]

 Lithodomus cinnamominus, Chem. Philippine Is. and St. Thomas, W. I. [=L. cinnamomeus, Maz. Cat. 177. Probably an Adula.]
 Lithodomus Cumingianus, Dkr., MS. "North Australia and Mazatlan." [The species is figured from the Mazatlan specimen, which may probably be the adult form of L. calyculatus, Cpr. The cup is not distinct, but shows a tendency to the peculiar formation described in Maz. Cat. no. 174. Rve.'s diagnosis, however, appears written from Dkr.'s Australian specimens, so labelled in Mus. Cum.—a very distinct species, without incrustations. The name was given by Mr. Cuming to a large Chilian species brought by the U. S. Expl. Exp.]

12. Lithodomus Gruneri, Phil. MS. in Mus. Cum. "N. Zealand." [The species of the state of the species of th

=L. falcatus, Gld., and is certainly from California, where it is found in the rocks with Pholadidea penila.]

13. Lithodomus teres, Phil. "Mazatlan." [The specimens in Mus. Cum. are

labelled "Cagayan, Phil."]

 Lithodomus coarctata, Dkr. Galapagos, Cuming. [= Crenella c., Maz. Cat. 172.]
 Lithodomus caudigerus, Lam. "West Indies" [without authority]. "The calcareous incrustation produced beyond the ant. extremity is no specific characteristic." [Vide reasons for contrary opinion, Maz. Cat. no. 176: = L. aristatus. Dr. Stimpson has seen Lithophagus arranging its peculiar incrustation with its foot.

24. Lithodomus pessulatus, Rve. (Oct. 1857). Hab. ?— [The unique sp. figured is labelled "Mazatlan" in Mus. Cum. It resembles plumula, with ventral

transverse rugæ.]

 Lithodomus subula, Rve. Hab.?— [=L. plumula, var.]
 Avicula Cumingii, Rve., March 1857. "Ld. Hood's Is., Pacific Ocean, attached to rocks, 10 fms., Cuming." [?=Margaritiphora fimbriata, Dkr., var.]

 Avicula barbala, Rve. Panama, under stones at low water, Cuming. [= M. fimbriata, Dkr.,= M. Mazatlanica, Hanl.] "Differs from Cumingii in regular sequence of scales, developed only at margin, and yellowish tone of colour.

Avicula heteroptera, Lam. N. Holland. "=A. sterna, Gld." [Gould's species is from Gulf Cal.; but in Mus. Cum. it is marked inside "semisuguta."]
 Placunanomia foliata, Brod. Is. Muerte, Bay Guayaquil. "May=echinata, W. I., but has very much larger orifice."
 Placunanomia macroschisma, Desh. "Onalaska, Cuming" [who never was there]. Kamtschatka, Desh. [Vancouver district, abundant.]
 Thracia plicata, Desh. "Mr. Cuming has specimens from California and St. Thomas, W. I." [Cape St. Lucas, Xantus.]
 Melania. [Various species are described from "Central America." &c., which

Melania. [Various species are described from "Central America," &c., which

name and locality attached, may appear soon after without any, or with erroneous, quotation. The error is rendered graver by appearing with the weighty authority of "Mus. Cum." or supposed, are rejected altogether. Thus shells sent to Mr. Cuming, with authentic

^{*} The species described in the Brit. Mus. Cat. seldom appear in the monographs, unless there happen to be a specimen in Mus. Cum. Some of the monographers often content themselves with figuring the shells that come most easily to hand; and do not seem to consider it a part of their work to pass judgment on previously described species, or to concern themselves with what are small or difficult.

may or may not belong to the Pacific slope. They should be studied in connexion with U.S. forms, but are not here tabulated.]

mia Buschiana, Rve. "California." [No authority. Very like the

50. Molania Buschiana, Rve. young of M. scipio, Gld.]
367. Melania mgrina, Lea, MS. in Mus. Cum. "Shasta, California."

68. Cancellaria funiculata, Hds., = C. lyrata, Ad. and Rve. Gulf Magdalena.
56. Litorina irrorata, Say. "Sitcha." [The "Sitcha" shell is L. modesta, Phil. Say's species is the well-known form from the Gulf of Mexico.]

Terebra strigata, Sby., + elongata, Wood., = flammea, Less., = zebra, Kien. "Panama. Galapagos, and Philippines, Cuming; Moluccas, &c." [Painting

in stripes.]
10. Terebra robusta, Hds. Panama, &c. [= T. Loroisi, Guér., teste Rve. P. Z. S.

1860, p. 450. Painting splashed.]

12. Terebra variegata, Gray. "Mouth of the Gambia, Senegal, Mazatlan, Columbia. It is well known to those who have studied the geographical distribution of animal life, that the fauna of the West African seas, north of Sierra Leone, is in part identical with the fauna of the seas of California and the W. Indies; and geologists, among whom was the late

Prof. E. Forbes, have laboured, not unsuccessfully, to account for this phenomenon." [Vide Maz. Cat. p. 157, B. A. Rep. p. 365. In the present instance, however, there will be more than one opinion as to the identity of the species here quoted.]+ T. africana, Grav,+ T. Hupei, Lorois,+ T. intertincta, Hds.,+ T. marginata, Desh.,+ T. albocincta, Cpr.,+ T. Historiana, Grav,+ T. T. subscience Graveley Corn.

Hindsii, Cpr., + T. subnodosa, Cpr.
72. Terebra armillata, Hds. "Panama, Galapagos. Somewhat doubtful whether this is not a var. of T. variegata." [If the others are, probably this is. Those species of Hinds, which Mr. Reeve has not altered, are not here repeated.

32. Terebra dislocata [as Cerithium], Say. "Southern U.S. and California." [No

authority given for Cal.]

34. Terebra rudis, Gray, "= M. rufocinerea, Cpr. S. Carolina, Jay. Somewhat doubtful whether this is not a var. of dislocata." [The T. rufocinerea is one of the difficult Mazatlan shells, and should share the fate of T. Hindsii and T. subnodosa.]

35. Terebra cinerea, Born. "W. Africa, Hennah; Japan, Hda.; Philippines, Cuming; W. I., C. B. Adams; Mazatlan, Cpr." [i. e. Reigen. The same remarks apply to this group as to variegata, &c.] + T. castanea, Kien., non Hds., + T. laurina, Hds., + T. luctuosa, Hds., + T. stylata, Hds., + T. Jamai-

censis, C. B. Ad. 40. Terebra aspera, Hds., + T. Petiveriana, Desh. Panama, S. A., Cuming, Bridges.

2. Calyptræa tortilis, Rve. Galapagos, Cuming.
8. Calyptræa diveolata, A. Ad., MS. Galapagos, Cuming.
4. Crepidula excavata, Brod. Chili[?], Cuming.
6. Crepidula nautiloides*, Less., MS. in Mus. Cum. "New York." [= C. dilututa.]

8. Crepidula marginalis, Brod. Panama, Cuming. [V. Maz. Cat. p. 292, note.]
10. Crepidula rugosa, Nutt. Upper Cal. [An accidentally ribbed specimen, figured from Mus. Taylor.]

11. *Crepidula fimbriata, Rve. (June 1859). Vancouver's Straits. [This is to navicelloides, Nutt., no. 97, as Lessonii is to squama; simply an accidentally frilled var.

12. Crepidula adunca, Sby. [Not] Panama. = C. solida, Hds., = rostriformis, Gld. [This is the northern species from Vancouver and Cal., and is not] =uncata, Mke.

Crepidula arenata, Brod.
 Elena (not Helena, Desh.), Cuming.
 Crepidula aculeata, Gmel.
 Lobos Is., Peru, Cuming; California, Nutt., Opr.

[i.e. Mazatlan, Reigen]; Honduras, Dyson; Sandw. Is., Austr., Kur-

[•] Several S. American forms are here quoted for the synonymy; because in Calyptraidae the species often have a wide range, and should be studied in connexion with their neighbours.

rachee, mouth of Indus. + C. hystryx, Brod., + C. echinus, Brod., + C. Californica, Nutt.

24. Crepidula rostrata, C. B. Ad. Panama. [= C. sencata, Mke., nom. prior. This

tropical form presents distinctive marks.]

28. Crepidula exuviata, Nutt. Monterey. [= C. explanata, Gld.,= C. perforans,
Val. An abnormal form of C. navicelloides, Nutt.: C. nummaria, Gld., is

the opposite extreme.]

29. Crepidula bilobata, Gray [s. e. Cpr.], MS. in Mus. Cum. [= C. dorsata, Brod. Vide Maz. Cat. no. 336, where the origin of the MS. name would have been found explained. It appears to be principally a northern species

been found explained. It appears to be principally a northern species = C. lingulata, Gld.]
30. Crepidula lirata, Rve. [Gulf of] California. [Intermediate form between C. incurva and C. onyx, described in Maz. Cat. p. 277.]
2. Crucibulum scutellatum, Gray. "= C. rugosa, Less., = C. imbricata, Sby., non Brod." Payta, Less.; Punta St. Elena, Cuming. [Vide Maz. Cat. no. 343.]
4. Crucibulum rugosum, "Desh., non Less., = C. lignaria, Brod., ? var. = C. gemmacea, Val." Island of Chiloë, Cuming. [Vide Maz. Cat. p. 290.]
5. Crucibulum ferrugineum, Rve. Bay of Conception, Chili, Cuming. [= C. quiriquina, Less., D'Orb., = C. Byronensis, Gray, in Brit. Mus. Like a rough decreaded form of C. minosum.] rough degraded form of C. spinosum.]

6. Crucibulum umbrella, Desh. = C. rudis, Brod. Panama and Real Llejos.
8. , oorrugatum, Cpr. "Cal." [Mazatlan, Jewett, P. Z. S. 1856, p. 204.]
9. , imbricatum, Brod. Panama. [= C. imbricatum, Sby., = C. scutellatum, Gray, no. 2, var.]

 Crucibulum spinosum, Sby. Seas of Central America. [Extends northwards to California; southwards it degenerates into C. quiriquina.] = C. peziza, Gray, + C. hispida, Brod., + C. maculata, Brod., + C. tubifera, Less., + C. cinerea, Rve.

11. Crucibulum pectinatum, Cpr., P. Z. S. 1856, p. 168. Peru. [Panama, Jewett.]
17. auritum, Rve., = C. striata, Brod., non Say. Valparaiso, Cuming. [Passes into Galerus.]

[Passes into Galerus.]
 Crucibulum serratum, Brod. Real Llejos and Muerte, Cuming. [Like young of C. pectinatum; nearly transparent; white, with purple ray.]
 Crucibulum sordidum, Brod., + C. unguis, Brod. Valparaiso and Panama, Cuming. [= Galerus; v. Maz. Cat. p. 292, note. The author distributes the species of this genus between Trochita and Crucibulum.]
 Trochita aspera [Rve. as of] C. B. Ad. Panama. [The small var. of Galerus conicus. Probably = C. aspersa, C. B. Ad., no. 331.]
 Trochita subreflexa, Cpr., MS. in Mus. Cum. Gulf of California. [= Galerus subreflexus, Cpr. in P. Z. S. 1855, p. 233.]
 Trochita corrugata [reujus. Comp. Calyptræa corrugata, Brod.]. Callao, Cuming.
 Trochita spirata, Fbs. "? = P. trochiformis, Chem." Gulf California. [Vide anteà, p. 542.]

anteà, p. 542.

Trochita solida [PRve.]. Conchagua, Mus. Cum. [P=Galerus mamillaris.]
 Perna anomioides, Rve. March 1858. California, Mus. Cum. [No authority: appears=P. costellata, Conr., Sandwich Islands.]

13. Perna Californica [Rve., non] Conr. California, Conr. [i. e. Nutt.] Honduras, Dyson. "Distinguished by the Pedun-like form and clouded, livid purple colouring. [This is the well-known large flat West Indian species; not known in California.]

3. Umbrella ocalis, Cpr. Mouth of Chiriqui River, Bay of Panama, [not] Cuming [but Bridges. The species was also found at Cape St. Lucas by Xantus.]

6. Ianthina fragilis, Lam., = I. striulata, Cpr. West Indies, Mazatlan, California.

[Vide Maz. Cat. no. 242: non I. striolata, Ad. and Rve.]

19. Ianthina decollata, Cpr. Probably = I. globosa, var. [Maz. Cat. no. 243. the two Maz. forms, provisionally named, this appears the least entitled

to specific rank.]
40. Columbella Bridgesii, Rve. April 1858. Panama, Bridges. [Appears the small var. of C. major.]

43. Columbella Boivini [= Boivinii, Kien.]. Gulf Nicoyia, Hinda.

Columbella acicula, Rve. California. [No authority.]
 Columbella encaustica, Rve. Gulf California, Lieut. Shipley, Mus. Cum.
 Columbella exillum, Rve. Gulf California. [No authority.]
 Columbella cribraria, Quoy and Gaim. [i. e. Lam.] = C. guttata, Sby. Panama, common under stones, Cuming. [No other localities given. V. Nitidella cribraria, Maz. Cat. no. 613.]
 Columbella electroides, Rve. Bay of Guayaquil.
 Columbella Pacifica, Gask. Galapagos.
 Columbella pusilla, Sby. Island of St. Vincent, W. I. "= Nitidella Gouldii, Cpr." [The Nitidella is a distinct Upper Californian species.]
 Columbella lactea, Rve. Gulf Calif., Mr. Babb, R.N. [A Nitidella, so transparent that the axis can be seen throughout.]

sparent that the axis can be seen throughout.]

122. Columbella Sta-Barbarensis, Cpr. Sta. Barbara. "Not merely faintly striated, teste Cpr., but unusually grooved." [Described from a worn specimen in Jewett's Col., and named to mark a more northern limit to the genus in Jewett's Col., and named to mark a more northern limit to the genus than had been assigned by Forbes. The label was probably incorrect, as the shell lives in the tropical fauna, C. S. Lucas, Xantus: Acapulco, Newberry; Guacomayo, Mus. Smiths. The name (as expressing error) should therefore be altered to C. Reevei, Cpr.]

123. Columbella spadicea, Phil., MS. in Mus. Cum. Mazatlan. [Described by Phil. in Zeit. f. Mal. 1846: B. A. Rep. p. 225.]

130. Columbella venusta, Rve. [Mazatlan, E. Philippi.] = C. taniata, Phil. [in Zeit. f. Mal. 1846], not Ad. and Rve., [Vov. Samar. 1850; therefore Phil. has precedence. ?= Anachis Gaskoinei, Maz. Cat. no. 652. The Samarang shell is probably a Nitudella.]

rang shell is probably a Nitidella.]

132. Columbella sulcosa, Sby. Annaa and Ld. Hood's Islands*. Cuming.

135. Columbella Gouldii, Agass., MS. in Mus. Cum., Nov. 1858. [=Amycla Gouldiana, Agass., Atlantic; non Nitidella Gouldii, Cpr.]

142. Columbella uncinata, Sby. Is. Muerte, Bay Guayaquil. [Acapulco, Jewett.]

165. Columbella Californica, Rve. April 1850. California. [No authority.]

Like Anachis lirata.]

176. Columbella rorida, Rve. Lord Hood's Island *, Cuming. [Transparent,

glossy, with necklace of opake white dots.]

Genus Meta [= Conella, Swains, eliminated by Rve. from Columbella; but Anachis, Strombina, Amycia (pars), and Nitidella, which do not even belong to the same family, if the opercula are to be trusted, are left in the old place. Of the six species, the author only knew the locality for one], M. Duponties, Kien.—Ichaboe, South Africa; [but that of] M. ovuloides, "C. B. Ad., MS." [is shown by his published works to be Jamaica; and the following are from the West Coast].

3. Meta cedonulli, Rve. [La Paz, Mus. Smiths.; C. S. Lucas, Xantus; Panama, Jewett.

4. Meta coniformis, Sby. [? Panama, Jewett.]
24. Ziziphinus luridus, Nutt., MS. in Mus. Cum. California. [Is not known from

the American coast; comp. Sandwich Islands.]

25. Ziziphinus eximius, Rve., P. Z. S. 1842. Panama, sandy mud, 10 fms.

[= T. versicolor, Mke., 1850, = Z. Californicus, A. Ad., 1851. Scarcely differs from "Javanicus, Lam.," in Mus. Cum. The form was dredged by Mr. A. Adams in the eastern seas.

31. Ziziphinus Antonii, Koch, in Phil. Abbild. pl. 1. f. 4. Australia. Scarcely differs from the shouldered var. of Calliostoma lima (Phil.) C. B. Ad.,

which is called eximin; Rve., in Brit. Mus. Col.]

23. Trochus Japonicus, Dkr., [represents Pomaulax undosus on the east side].

24. Trochus digitatus, Desh. Distinct from unguis, with base like gibberonus.

Central America. [Mr. Reeve's distinct shell is perhaps not that of Desh., and not from the West Coast.]

26. Trochus undosus, Wood. = T. gigas, Anton. California †.

* Vide Report, 1856, p. 168, note §5.
† Mr. Revve states that, although this species is most like gibberosus, "Messrs. Gray and Ada.ns contrive to place them in different genera." It is still more remarkable that, while

39. Trochus auripigmentum, Jonas. Panama. [Probably not from W. America.]
17. Phasianella perforata, Phil. Mazatlan, Panama + Ph. compta, Gld. • Rather out of place †; has neither form nor texture of Phasianella. [The aberrant form is due to the figured specimen being quite young; the adults in Brit. Mus. Col. prove the texture, colouring, and operc. to be normal.]

Genus Simpulopsis. This group, intermediate between Vitrina and Succinea, is stated to be peculiar to Brazil and Mexico, where Vitrina is not known.

In the Monograph of Terebratulida, which is prepared with unusual care, and the general introduction to which is well worth attentive perusal by all students, occur the following species which bear upon the West Coast fauna or synonymy :-

2. Terebratula (Waldheimia) dilatata, Lam., = T. Gaudichaudi, Blainv. "Str. Magellan," teste Gray, in Brit. Mus. Cat., without authority. [The E. E. specimens varied considerably in outline; and according to Darwin, and what we know of the variations of fossil species, it is quite possible to believe that this and the next species had a common origin. The great development of this most interesting form in the cold regions of South

America is extraordinary.]

3. Terebratula (Waldheimia) ylobosa (Val.), Lam., from type. = T. Californica, Koch. "California, Coquimbo. Californian form well known; small specimen in Mus. Taylor, marked 'de Coquimbo.'" [There appears no authority for the general belief that this fine species is Californian. It was taken in abundance by the naturalists of the U.S. E. E. at Orange Bay, Macrollan. The Californian shell which is arrebable; the original Californian. Magellan. The Californian shell, which is probably the original Californica, Koch. (not of authors) is a distinct species, teste Rve. from Dr. Cooper's specimens.]

7. Terebratula (Terebratulina) radiata, Rve., Mus. Cum.

P Straits of Cores,

Belcher. [Very like the adult of T. caurina, Gld.]

Terebratula uva, Brod. Bay of Tehuantepec, Guatemala; 10-12 fms. sandy mud, on dead bivalve, Capt. Dare. Mus. Cum. and De Burgh. [The analogue of T. vitrea, Med.]

Terebratula (Terebratulina) Japonica, Sby., = T. angusta, Ad. and Rve. Corea, Japan. "Represents T. caput-serpentis, and probably the same."
 Terebratula physema, Val., MS. (unique), Coquimbo. Gaudichaud, 1833.
 May be a colossal, broadly inflated var. of globosa.

6. Orbicula Cumingii, Brod. [Besides information in Rep. pp. 183, 244, is given]
Is. Caña, Guatemala; sometimes 6-18 fms., Cuming. O. strigata, Brod., is a less-worn state of this species. [The type-specimens of Discina strigata in Brit. Mus., on Pecten ventricosus, appear very distinct, and are unusually shelly for the genus.]

excluding Ziziphinus (= Calliostoma), Mr. Reeve "contrives to place" in Trochus animals shown by the opercula to belong to different subfamilies, as though we knew no more than in Lamarch's days; his motley group containing Imperator (= Stella, H. and A. Ad.) + Lithopoma + Guildfordia + Chrysosioma + Bolma + Modelia + Polydonta + Tectus + Pomaulax + Astralium + Pachypoma + Uvanilla. Also in a family the genera and species of which are mainly recognized by the base and mouth, most of the shells are only figured on the back. Very often the characters of the aperture are not even stated. Remarkable liberties are, moreover, sometimes taken with geographical facts, to the great astonishment of Americans, who expect even their schoolboys to avoid such statements as at sp. 57, Tr. diminutious, Rve., "Oahu Islands;" and at sp. 1, Lingula ovalis, Rve., "from W. II. Pease, Esq., residing at Honolula, one of the Sandwich Islands."

* P. compta is a distinct Californian species; its Prarieties pass into pulla. If Mr. Reeve can be followed in uniting to pulla, pulchella, Rech.; +affinis+tessellata+pulchella +concinna, C. B. Ad.; +tennis, Phil.; +intermedia, Scaochi; +Capensis, Dkr.; +elungata, Krauss, Gould's species should join this goodly company, rather than perforata. The same standard of union followed among the large shells would greatly lessen the size

of this costly work.

† So is Phasianella rubra, Pease MS., sp. 18, which belongs to Alcyra, A. Ad.; allied to Eucheius.

-7. Orbicula ostreoides, Lam., = O. Norvegica, Sby. (non Lam.) + O. striata, Sby. + Crania radiosa, Gld. + O. [Discina] Evansii, Dav. ? N.W. Africa. "The locality, 'Bodegas, Cal.,' given by Mr. D. with O. Evansii, on Mr. Cuming's authority, must, I think, be a mistake." [The genus has not been found

8 Venus * grata, Sby.,+tricolor, Sby. Gulf of Mexico, Mus. Cum. [= Tapes grata, Say, Panama. The locality-labels have probably been misplaced. These specimens are undoubtedly from the West Coast, nor has any authority appeared for the species in the Atlantic. The Gulf of Mexican "analogue" is T. granulata. The forms are intermediate between Chione and Tapes.

9. Venus multicostata, Sby. Bay of Panama, in coarse sand at low water, Cuming. "Probably = V. Listeri, var., with ribs more turnidly thickened and rounded. [The West Coast shells are distinguished by the very slight crenulation

of the ribs at the sides.]

 Venus asperrima, Sby. Guacomayo, Centr. Am., sandy mud, 13 fms., Cuming.
 "A form of pectorina; shell of lighter substance, broader and more depressed; sculpture more elevately and definitely latticed." [This is the shell named by Mr. Cuming V. cardioides, Lam., and should take that name, as prior to Sby.'s, if really distinct from pectorisa. Also from Panama. Mus. Smiths.]

22. Venus discors, Sby., jun. St. Elena and Guacomayo, Centr. Am., sandy mud, 6-9 fms., Cuming. "Concentric decussating ridges cease abruptly at the posterior third." [Character very variable, even in the type-specimens;

= T. grata, Say, var.]

25. Venus pectorina, Lam., p. 344, + V. cardioides, Lam. Centr. Am., Mus. Cum. [Probably Atlantic; much heavier and stumpy; sculpture coarser; teeth more like casina, whereas cardioides, no. 19, has a long anterior tooth like sugillata †.]

26. Venus cingulata, Lam., = pulicaria, Brod. W. Columbia, Pinacatensis, Sloat, MS. in Mus. Smiths. Guaymas. W. Columbia, Cuming. [=V.The peculiar smoothing-off of the central sculpture in the adult may be varietal. It

is improbable that Lam. was acquainted with the species.

33. Venus crenulata, Chem., = crenata, Gmel. W. I. = V. eximia, Phil., + V. crenifera, Sby., + V. Portesiana, D'Orb. [Not to be confounded with the V. crenifera, Maz. Cat.: has a small Cyprinoid lateral tooth, but no radiating ribs near lunule, nor long anterior tooth †.]

35. Venus Californiensis, Brod., = V. leucodon, Sby. Guaymas, Gulf Cal., sandy mud, low water, [teste] Cuming. Mus. Cum. [= V. crassa, Sloat, MS. in Mus. Smiths. Not V. Californians, Conr., = V. simillima, Sby. This obsolete, approach Anomalocardia subimbricata, and with that species form a natural group, differing from the typical Venus as Lioconcha does from Callista: = V. succincta, Val.

41. Venus Kennerleyi, Cpr., MS. t in Mus. Cum. Hab .- P [Puget Sound, Kennerley.]

43. Venus sugillata, Rve. California, Mus. Cum. Characterized by the shining purple umbos, finely latticed sculpture, dark-stained lunule and liga-mentary area. [="V. crenifera, Sby., teste Rve.," Maz. Cat. no. 105, in all essential characters. Differs in the long anterior tooth being still

† The characters of the teeth and pallial line frequently afford satisfactory diagnostic marks between critical species, which are often overlooked by monographers.

† The descriptions of Dr. Kennerley's shells had long been written, and would have

been published but for the American war. The localities of all the West Coast shells sent

Through the kindness of Mr. Reeve, with a view to the completion of this Report, I was enabled to compare the figured specimens in this genus with the text, and with the shells of the Smithsonian collection, before they were distributed. The bracketed notes in the text are based on this examination. They are given with unusual detail, because of the unique opportunity of throwing some light on a confessedly difficult family.

longer, and in the purple colour. This, however, in the figured specimen, has been brought-out by the free use of soid, and the markings have been considerably obliterated by the "beautifying" process.]

44. Venus simillima, Sby. San Diego, Cal. "Resembles V. compta in detail of sculpture" [but perfectly distinct, belonging to the amathusia group. It shows the evil of the very brief diagnoses of the earlier conchologists that so discriminating an author as Mr. Conrad should have taken this shell for the V. Californies of Rend.: and questing it (lenses) as V. Californies of the second contradiction of the contra shell for the V. Californiensi, Brod.; and, quoting it (lapsu) as V. Californiana, redescribed the true V. Californiensis as V. Nuttallii. It is known by the great closeness of the fine sharp ribs.]

48. Venus = crenulata, no. 33, very distinct var. Gulf Cal.; more globose, interior

purple rose. [This was sent as "Cape St. Lucas, Xantus." It appears truly distinct from the W. I. crenulata, and to be the normal form of which pulicaria, no. 26, is an extreme var. Inside, and outside in the adolescent state, they agree exactly; differing outside, in the adult, in smoothed-off ribs and more distinct V-markings. Mr. Reeve, however, still thinks it more like crenifera. It may stand as "? var. lilacina."]

47. Venus gibbosula, Desh., MS. in Mus. Cum. Hab.?—[Guaymas:=V. Cortezi,

Sloat. This is the more rounded and porcellanous form of *V. fluctifraga*, = *V. Nuttalli* of Brit. Assoc. Report, and Nuttallian paper in P. Z. S. 1856, p. 21; but not the true *V. Nuttalli*, Conr., v. infra, no. 49. Interior

margin very finely crenated on both sides of the hinge.]
48. Venus compta, Brod. Bay of Sechura, Peru, coarse sand and mud, 7 fms.,
Cuming. [This rare species seems to represent V. Californiensis in the South American fauna. It is well distinguished by its shouldered form, produced ventrally, and by the Circoid pallial line, far removed from the

margin. Guacomayo, Mus. Smiths.]

49. Venus Nuttalli, Conr. California. [Named from type, teste Conr. ips., v. anteà, p. 526. This is the dull northern form of V. succincta, as fluctifraga is of gibbosula, the species appearing nearly in the same parallels in the Gulf and on the Pacific coast, but not found in the Liverpool Reigen Col.; nor at Cape St. Lucas. In all essential characters, Nuttalli (though pointed) and Californiensis (though rounded) appear the same; but Mr. Reeve still thinks otherwise. The figured specimen has been altered with

acid. The V. excavata is not noticed by Mr. R.] 51. Venus mundulus, Rve. Hab.?— [This shell was obtained by Dr. Stimpson in the N. P. Expl. Exp., and bears the Smiths. Cat. number "1845. San Francisco, very common at low water," = Tapes diversa, Sby. jun. This is the highly painted, finely sculptured state of *T. staminea*, Conr. (not "T. straminea, Conr." Sby.,= T. grata, var.) The abnormally ridged form is V. ruderata, Desh. Conch. Ic. sp. 130. By its large pallial sinus and high teath it is a true Trans.

bifid teeth it is a true Tapes.]

52. Venus intersecta, Sby. Puerto Puero [? Portrero], Centr. Am., Cuming.

[The shell is exactly identical with no. 19, asperrima = cardioides; but the

figure might mislead, the colour-lines appearing as ribs.]

54. Venus subrostrata, Lam. * vi. p. 343, = V. neglecta, [Gray] Sby. Hab. Mazatlan and West Indies. "Lam. having cited a figure of the China species, V. Lamarckii, the species was lost sight of till Sby. renamed it." [The Lamarckian species was probably West Indian. V. neglecta closely resembles the young of V. Californiensis, but has the ligamental area smooth only an one value instead of both.] on one valve, instead of both.]

59. Venus Stutchburyi (Gray), Wood, Sandwich Is. Comes very near to the Californian V. callosa, [Sby., non] Conr., of which specimens have been found also at the Sandwich Is. [V. Stutchburyi is the New Zealand species, which may easily be confounded with the Californian. Although both may be obtained at the Sandwich Is., there is no evidence that either

* In critical species, when it is impossible to be positive which of two or more was intended by an old author, it appears best to retain the name of the first discriminator. The old name belongs to the general form: the discriminator ought to retain it for a part; but if that has not been done, it avoids confusion to drop it.

The shell here figured is beaked like Nuttalli, no. 49; lunule very faint; concentric ridges very faint, but sharp; radiating ribs very coarse. Inside deeply stained; margin not created on the sharp anterior edge, though faintly on the lunule; hinge-teeth stumpy.]

- 60. Venus muscaria, Rve. Hab.?— [Has the aspect of a West Coast species, between cardioides and fine var. of staminea; sinus large; teeth strong, not bifid; lunule with radiating ribs.
- 68. Venus undatella, Sby. Gulf Calif. [Not a satisfactory species, the type having the aspect of a poor specimen altered for cabinet. The "sculpture much changing in its development towards the margin" is an accident often seen in the cancellated species. Similar specimens of V. neglecta, no. 54, collected at Cape St. Lucas by Mr. Xantus, agree with undutellation. in all respects, except that this is violet within, neglecta being white.
- in all respects, except that this is violet within, neglecta being white. Ligament-area (as in neglecta) smooth in one valve only.]

 77. Venus Adamsii, Rve. Japan. [Closely related to Tapes lacimata, San Diego, in size, aspect, hinge, &c. Differs in mantle-bend being not so long or pointed, and the radiating sculpture much finer: w. rigida, Gld., MS., in Stimpson's list; non Gld. in 'Otia.']

 80. Venus ornatissma, Brod. Panama, sandy mud, 10 fms., Cuming. Still unique. [Like V. gnidia, jun., but radiating ribs coarser and more distant; concentric frills not palmated; lunule pale, laminated.]

 87. Venus callosa [Sby., non] Conr. Sandwich Is. and Calif. [Vide note to no. 50. This is the V. Nuttallii of the Brit. Assoc. Report. Those who regard it as distinct from factifraga, of which albhanda, no. 47. is the extreme
- it as distinct from fuctifraga, of which gibbonda, no. 47, is the extreme form, may retain the name callosa of Sby., but not of Conr. Conrad's species = C. nobilis, Rve.; differing from the true Callista, as Mercenaria does from Venus, in having the ligament-plate rugose.] = V. fluctifraga,
- Sby., teste Rve. in errata.

 105. Venus bilineata, Rve. Gulf Calif. Partakes of the characters of compta and subimbricata: all three may indeed be different states of one and the same species. [The shell figured at 105b has all the peculiar features of compta, which are clearly marked within; only the concentric waves are closer than usual. The shell figured at 105a appears to be the true residatella, only in fine condition, the type being rubbed. It has exactly the same internal characters, including colour; only the colour-lines outside are arranged in rays instead of Vs. Mr. Reeve, however, retains his different opinion.
- 116. Venus Cypria, Sby., P. Z. S. 1852. Is. Plata, West Columbia. [From same district, teste Schott in Mus. Smiths.] Has all the appearance of being an attenuately produced form of the West Indian V. paphia [which is
- also from Cape Verd Is., teste Macgillivray in Brit. Mus.].

 11. Dione maculata, List. West Indies; Brazil; Pacific Ocean. Widely distri-
- buted in both hemispheres. [No authority for the Old World; the Pacific shells are Callista chionæa, var.]

 15. Dione nobilis, Rve., 1849. Cal. [= C. callosa, Conr., 1837. The original name, from type, had been communicated to Mr. R., but is not quoted.]

 20. Dione semilamellosa †, Gaud., = C. lupanaria, Less. Centr. Am. [= hupinaria, Maz. Cat., no. 95. Vide Deless. Rec. Coq. pl. 19. f. 2: "China Seas," no authority. authority.]
- 21. Dione brevispinata, Rve., = brevispina, Sby. [Gulf of] California. [Scarcely differs from C. rosea, jun.]
- 22. Dione multispinosa, Sby. Peru. Concentric ridges thinly laminated; spines slender and numerous. [An extreme form of the Pacific C. Dione (teste Hanl.); distinct from semilamellosa.]
- 23. Dione Veneris, D'Arg. Conch. pl. 21. f. 1,= V. Dione, Ln. West Ind. and

 The figured types of this genus had been accidentally mislaid; and might alter the judgments given in the text.

† "For obvious reasons, I think it best to abandon the foul name given to this lovely species by Lesson," Rve. (Vide Maz. Cst. p. 70, note.) ? Would not the same reasons lead to the alteration of meretrix, impudica, &c.

Centr. Am. [The Pacific shells should rank with species 22, if sup-

posed distinct. The fig. is 24, not 23.]

24. Dione exspinata, Rve. Centr. Am. Distinct, if the others are; like semilamellosa, without spines. [Appears to be C. rosea, jun. The fig. is 23, not 24.]

Dione circinata, Born. Mazatlan, Mus. Cum. [without authority.] = V. rubra, Gmel., + V. Guineensis, Gmel., + C. alternata, Brod. [f. 28 repre-28, a, b. (sents alternata; the other figures appear to be from West Indian spe-

cimens, though that ancient locality is not mentioned. Several of the reputed West Coast shells are, however, of the typical form and colour.]

33. Dione unicolor, Sby., = Chione badia, Gray, = Cyth. ligula, Anton. W. Columbia.

38. Dione prora, Conr. "Cape St. Lucas, Xantus, California; Carpenter." [A very distinct form among the thin inflated species; only yet found at

the Sandwich Is., v. no. 45. 45. "(Mus. Smithsonian Institute of N. America.) This shell, from Cape St. Lucas, Xantus, California, proves to be the *Dione prora* (Cytherea prora, Conr.) of our preceding plate." [Mr. Sowerby's figure well represents the unique specimen from Cape St. Lucas, which was taken alive by Mr. Xantus. The quotations in Conch. Ic. would lead to the inference that "Xantus" was regarded as that part of "California" in which Cape St. Lucas is situated. Both the external and internal characters require that a separate name be given to the shell, which stands as Cullista pol-

licaris, Annals Nat. Hist. vol. xiii. p. 312.]
48. Cytherea consanguinea, C. B. Ad. Mus. Cum. Apparently a small specimen of a variety of C. leta. [Panama. Differs from C. leta in internal characters.

62. Dione paniosa, Shy.,=Cytherea lutea, Koch,+Callista puella, Cpr. Chili,
Peru, Mazatlan. [No authority for Mazatlan. The name puella given
to the Cape St. Lucas specimens was intended as varietal; although Mr. Cuming regards the Peruvian and Peninsular forms as d stinct. It

is not known along the Central American coast.]

25. Circe nummulina, Lam. "Central America." [Probably not from the American seas. Admiral Sir E. Belcher is, however, confident that he dredged many well-known E. Indian forms in deep water, off San B.as.]

27. Cytherea. In this genus are grouped the Trigona; besides the typical species, = Meretrix, Gray.

3. Cytherea crassatelloides, Conr. "Bay of California." [Not known geographically. The shell is not found in the Gulf, being a most characteristic Californian species. San Francisco, S. Diego, &c.]

27. Cytherea radiata, Sby., + C. gracilor, Sby.,= V. Salangensis, D'Orb. = T. Byronensis, Gray. Salango and Xipixapi, 9 fms. sandy mud, Cuming.

45. Cytherea nitidala, Lam. Mediterranean. [The figures and descriptions of Cytherea nitidala, Lam. Mediterranean.]

Sby. and Rve. well represent specimens from Cape St. Lucas, Xantus.

Perhaps not identical with Lam.'s species.]

9. Tapes grata, Desh. Philippines. [May stand as T. Deshayesii, if it be conceded that Say's V. grata ranks best with Tapes.]

7. Solarium granulatum, Lam. Mexico.

8. Solarium verrucosum, Phil. W. Indies. P. S. granulatum, var.

13. Solarium placentula, [Rve. = placentale,] Hds. Bey Magdalena, 7 fms., Belcher.

19. Solarium quadriceps, Hds. Panama. Young state of same type as sp. 7 and 8,
"from same locality (Pan., Mex., W. I.)," but grows much larger. [The Texan shells in Mus. Smiths. are as large as those from Cape St. Lucas: the variations on each coast are coordinate.

63. Kiener.—The following species may be added to the list quoted from "Coquilles Vivantes," in Rep. pp. 293, 294:—

Fig. 2. Conus regius, Chem., = C. princeps, Ln., W. Mexico.

98. 3. | Conus Largillierti, Kien. Mexico. [Coast not stated.]

213. Conus Philippii, Kien. Mexico. [Coast not stated.] Pleurotoma triticea, Kien. Indian Ocean. [Probably Cithara stromboides, Val.; Cape St. Lucas.]

Columbella suturalis, Gray (Griff. pl. 41. f. 2) = C. costata, Ducl. Mon. pl. 12. f. 1, 2. Pacific, Coasts of Peru [= Anachis fluctuata, Sby.].

Columbella bicolor, Kien. Hab. ?— [= A. rugosa.] 9.

64, 65. (German Authors.) Pfeiffer.—Everything relating to the landshells of North America will be found so thoroughly collated in the works of Mr. Binney (v. infru), that it is only judged needful to present here the most important references to the writings of the great authority on the *Pulmonatu*. The student must necessarily consult the 'Symbolæ ad Historiam Heliceorum, Cassel, 1841' et seq., which contains the following original authorities :-

p. 89. Achatina Californica, Pfr. Monterey, Cal.
 91. Achatina (Glandina) turris, Pfr. Hab.?— [Genus altered to Oleacina, Mon. Hel. iv. p. 640. Maz. Cat. 231.]

In the same author's great work, 'Monographia Heliceorum Viventium,' Lipsis, 1847-8, occur-

1847. 324. Helix Sagraiana, D'Orb. Cuba, California. [Sowerby's Vol. I. error, copied by succeeding writers. The species is exclusively Cuban.] 338. Helix fidelis, Gray. Oregon. = H. Nuttalliana, Les.

339. Helix Californiensi, Lea. California. + H. Nickliniana, Lea. [Quoted as a distinct species in Vol. IV. p. 269.]
229. = H. arboretorum, Val.)

(Vol. 3. 341. Helix Townsendiana, Lea. California.

(Vol. 3. 229. = H. pedestris, Gld., + ruida, Gld.)

428. Helix Oregonensis, Lea. Oregon. 227. = H. Dupetithouarsii, teste Pfr.)

Vol. II. (Vol. 4. 101. Bulimus Mexicanus, Lam. Tabasco, Mexico. = H. (Cochlo-1848. gena) vittata, Fér.

412. (Vol. 4.

472. = Orthalicus M., Cpr.)

143. Bulimus zebra, Müll. Mexico, &c = Zebra Mülleri, Chem.

= Bulimus undalus, Brug. = Orthalicus livens, Beck *,

+ B. princeps, Brod. + B. melanocheilus, Val.

231. Bulimus (Cochlogena) melania, Fer. California. = Melania striata, Perry = B. borinus, Brug.

Vol. III. 1853. 127. Helix Pundoræ, Fbs. St. Juan del Fuaco. 347. = H. Damascenus, Gld.) (Vol. 4.

415. Bulimus Humboldti, Rve. = B. Mexicanus, Val. [? non Lam.] Mexico.

422. Bulimus Californicus, Rve. California.

Vol. IV. 1859. 89. Helix Muzatlanica, Pfr., n. s. (Mal. Blatt., Apr. 1856, p. 43.) Mazatlan.

268. Helix exarata, Pfr., n. s. California. 270. Helix reticulata, Pfr. (Mal. Blatt. May 1857, p. 87). Cal. 276. Helix Mormonum, Pfr. Mormon Island, California.

347. Helix cultellata, Thomson. Contra Costa Co., California. 350. Helix arrosa, Gld. Hab.?— [California.] + æruginosa, Gld. 420. Bulimus chordatus, Pfr. (Mal. Blätt., April 1856, p. 46.)

Mazatlan.

472. Bulimus Ziegleri, Pfr. (Mal. Blätt., Dec. 1856, p. 232.) Mexico. = Orthalicus Z., Cpr.

These appear as three distinct species in Vol. IV. p. 588-9, with the addition of R. longus, Pfr. (= Orthalicus L., Mal. Blätt., Oct. 1856, p. 187.)

In the 'Monographia Pneumonopomorum Viventium, &c., Cassellis, 1852, by the same learned author, the following is the only species which occurs:---Suppl. 1858, Vol. II. p. 7. Truncatella Californica, Pfr. San Diego.

In Wiegmann's 'Archives für Nat.,' 1837, vol. i. p. 285, occurs the following species, also without authority:-

Perna quadrata, Anton. California.

In Troschel's 'Archives für Natur' are quoted the following:-

1843. Vol. II. p. 140. Fasciolaria sulcata, Less. Acapulco. 1849. , p. 99. Terebratula Californica, Linsley.

In the 'Abbildungen und Beschreibungen neuer oder wenig gekannter Conchylien, herausgegeben von Dr. R. A. Philippi, Cassel, 1845-51, are figured the following, which must be quoted as being original descriptions, or for the synonymy:-

```
Cyrena solida, Phil. California, &c.
Tellina pisiformis, Ln. Mazatlan, &c. = L. pulchella, Ad.
? = Cardium discors, Mont.
Feb. 1846.
Aug. 1846.
                                 24. 4.
                                                                  Cytherea Dunkeri, Phil.
                                                                                                                                W. C. Mexico. = C. Pacifica,
Oct.
                1844.
                                                                      Mus. Berol., non Dillw.
                                temis ponderosa, Gray.

1. 1. 1. Murez nigritus, Phil. P.W. C. Mexico.

11. 7,8. 1. Haliotis fulgens, Phil. P. California. = H. splendens, Rve.

5. 2. 1,10. Turbo Fokkesii, Jonas. Gulf of California.

8. 2. 9. Trochus strigilatus. Ant. California.
Apr. 1847.
              1845.
April 1847.
Oct. 1846.
                                                                       Wood.
                                                                 Wood.

Patella (Acmæa) discors, Phil. 'Mexico.

Lucina obliqua, Phil. ? W. C. America.

Lucina pisum, Phil. Mazatlan.

Pecten tunica, Phil. "Sandwich Islands . E. B.

Philippi." Jan. 1844. [= P. latiauritus, Conr., teste

Hanl. S. Diego, &c.]

Pecten Fabricii, Phil. Greenland. [= P. Islandicus,

jun. Non P. Fabricii, Gld., = P. Hindsii, jun.]

Litorina aberrans. Phil. P. Z. S. 1845. p. 142. Pa-
                                           2.
                                                     5.
July
               1844.
April 1850.
                                 9.
                                           2.
                                                    8.
                                           2.
                                                     9.
                                  9.
                                            1.
                                                      8.
                                        1. 5.
```

Litorina aberrans, Phil., P. Z. S. 1845, p. 142. 11. 6. 9. nama, on rocks. [=Tall var. of L. conspersa.]

In Dr. L. Pfeiffer's 'Novitates Conchologicæ,' Series II., Marine Shells, by Dr. W. Dunker, Cassel, 1858, occur the following species from Sitka:-

```
Page. Pl. Fig. 1. 1. 3, 4. Tritonium carinatum, Dkr.
                                                   Sitka. [Should be pl. 2. f. 3, 4.]
                   [=T. angulosum, Mörch, on plate.]
                                                            Should be pl. 2. f. 1, 2. [Should be pl. 1. f. 5, 6.]
          1, 2.
                Tritonium Mörchianum, Dkr. Sitka.
     1.
                Tritonium rutilum, Mörch.
 3.
                                                            Should be pl. 2. f. 5, 6.]
          5, 6. Tritonium Rombergi, Dkr.
 4.
     1.
                                                     27
          3, 4. Neptunea harpa, Mörch!
                                                             Should be pl. 1. f. 8, 4
     2.
                                                     "
          1, 2. Neptunea castanea, Mörch. [= N. badia, on plate.]
                                                            [Should be pl. 1. f. 1, 2.]
 35. 10. 6, 7. Murex (Hemifusus) Belcheri, Hds., var. ?- [= Chorus B., L. Cal.]
```

7-9. Cytherea (Tivela) arguta, Röm. Isthmus of Panama. Resembles
 C. (Trigona) mactroides, Born. [Probably Caribbean.]

66. British Museum Collection .- "Lunatia ravida, Souleyet, Panama,"

[•] A large number of Californian shells have been assigned to the Sandwich Is., in consequence of the abundant trade between the two localities. They may often have been obtained at Honolulu by naturalists, who had no reason to doubt their having lived there All that is known of the genuine Hawaian fauna will shortly be published by Mr. Sowerby, for W. H. Pease, Esq., of Honolulu.

is given without authority; and the locality is probably erroneous. Various other shells are scattered in the national collection, assigned either generally to the West Coast or to special localities, which it has not been considered needful to tabulate without confirmation.

68. Various sources.—Under this head may be arranged gleanings from

European authors not consulted in preparing the first Report.

In the 'Histoire Naturelle des Coquilles,' by L. A. G. Bosc, Paris, 1830, the following species, not previously quoted, are assigned to the West Coast, but without authority :-

Page. 44. Venus paphia. W. America YoL III 280. Nerita fulgurans, Bosc. W. C. America. 290. Natica rugosa, Chem. IV. 60. Helix peregrina. Island on 152. Trochus solaris. &c. " 156. Trochus radiatus. &c. W. C. N. America. 219. Murex lima. In Lesson's 'Illustrations de Zoologie,' Paris, 1831-2, appear-Plate. Calypeopsis tubifera, Less. [= Crucibulum spinosum]. 41.(1832.) Trichotropus Soverbiensis, Lesson. Seas of New World. = Trichotropus bicarinata, Br. & Sby. = Turbo bicarinatus, Sby.
 48. Terebra flammea, Less. [? = T. strigosa], Antilles; Isth. Panama.

Tegula elegans, Less. [= T. pellis-serpentis]. Isth. Panama.

The following West Coast shells are named and figured by Dr. Gray in 'Griffith's Edition of Cuvier's Animal Kingdom,' London, 1834. In some instances there are also a few words of description:-

Plate. Fig.
1. 3. Litorina pulchra.

41. 5. Turbenella ceratus [? Turbinellus].

41. 6. Columbella suturalis [Kiener figures this shell for Anachis fluctuata, Sby., 1832. The original might stand for many species].

36. 2. Nassa Northiæ [= Northia serrata, Kien.].

- 36. 3. Turbinella tubercularis [= Latirus tuberculatus (= ceratus, C. B. Ad.)].
- Terebra Africana. [The Gulf Cal. shell, = varieyata.]

- Triton (Pusio) elegans [= Pusasia insignis, Rvc., 1846].
 Columbella harpaformis [= harpiformis, Sby.].
 Clavatula Griffithii. [Probably = Pl. funiculata. The The shells in this plate
- are reversed, but are repeated correctly in pl. 37 .]

 19. 1. Cytherea Dronea, var. [= C. semilamellosa, Gaud.; perhaps intended for C. dione, var.].

In Woodward's most valuable 'Manual of the Mollusca,' London, 1851-6, the following species are quoted as from "California":-

Pl. Fig. 5. Cancellaria reticulata, Dillw. [PW. Indies.] Page. 108. 171.

Physa Maugeræ. [? Ecuador.]
23. 22. Parapholas bisulcata, Conr. [v. Rep. p. 265. Not known from the Californian or W. Mexican coasts. Resembles P. calva]. 329.

In the very valuable handbook of bivalves, 'Recent Shells, by S. Hanley, London, 1842-56,' will be found either quoted or original diagnoses of all West Coast species known to the learned, patient, and minutely exact compiler. As the locality-marks are simply transcripts, they are not here repeated, especially as "California" is used for both the temperate and the tropical The following synonyms will be serviceable to the student:-

Page.
16. Solen subteres, Conr., ? = S. Dombei, ? + Californianus. Upper Cal. 28. Lutraria lineata, Say, = (Cryptodon) Nuttallii [teste Hanl., non] Conr.

Page. 72. Tellina inconspicua, Br. and Sby., ? = Sanguinolaria [Californiana, Conr., non] fusca, Conr. [= the Eastern species].

In the Appendix are the following species, of which small figures are given to correspond with those in Wood's Ind. Test:-

Page. 339. Fig. 50. Periploma obtusa, Hanl. W. America. 13.

5. Amphidesma proximum, C. B. Ad., = A. corrugatum, Ad. Mexico. 241. 12.

51. Arca Reeveana, D'Orb. W. America. = A. squamosa, var., D'Orb. 18. 873.

= A. Helbingii, Rve. 40. Meleagrina Mazatlanica, Hanl. Mazatlan [= M. fimbriata, Dkr.]. 388. The following are extracted from the 'Journal de Conchyliologie,' Paris, 1850:-

No. 1. Feb. 1850. 57. Columbella Haneti, Petit. P Mazatlan. Observations on Nerita scabricosta, Lam., by 4. Dec. 1850. 410.

Petit. West Coast of N. America. Vol. 3. 1852. 57. 11. Mitra Haneti, Petit. Mazatlan.

1853. 53. 11,12. Natica Taslei, Recl. Mazatlan.

1853. 84,166. в. 13-15. Gnathodon trigonum, Petit. Mazatlan $\Gamma = M$.

mendica, Gld., 1851]. Recluzia Rollandiana, Recl. 1853. 119. 5. 12. [Genus de-

scribed.] Mazatlan. 1853. 154. 9,10. Natica Moquiniana, Recl. ? West Coast of America.

Series II. Vol. 2. Oct. 1857. 171. Adeorbis Verrauxii, Fischer. [California. 285. в. Skenea Verrauxii, Fischer. 292. Review of the Brit. Assoc. Report and Brit. Mus. Reigen Catalogue, by Fischer. Vol. 9. 209. Review of the Smithsonian Check Lists, by

Fischer.

The following species are figured in Chénu's 'Illustrations Conchyliologiques'; but no authority is given for the localities, nor etymology for the remarkable names :-

Page. Fig. 20. PL 2. Oliva selasia, Durl. Acapulco. 3, 4, 21, 22. 5, 9, 23, 24. Oliva caldania, Ducl. California. Oliva razamola, Ducl. California. 13. 13. Olivia azemula, Ducl. California. 1, 2, 10, 11. 7, 8. 10, 11. [15. 19. Oliva mantichora, Ducl. California. 16. 12. Oliva pindarina, Ducl. California. 7, 8. 17. 28. 27. 9, 10. Olica todosina, Ducl. California.

An excellent commentary on the above species, and on the difficult genus to which they belong, is supplied in the 'Revue Critique du genre Oliva,' by M. Ducros de St. Germain, Clermont, 1857. It was written, not from the well-known London collections, but from a very large series containing all the types figured by Duclos. The following is the author's arrangement of the West Coast forms, excluding citations of well-known species.

No. Page. 25. 49. Oliva angulata does not include azemula, Ducl., as Rve. says; that being

a var. of ponderosa + erythrostoma.

50. Oliva Maria, n.s., pl. 2. f. 26, a, b; intermediate between Julietta and an-26. gulata. California, teste Duclos. [Appears to be one of the vars. of Cumingii.

52. Oliva reticularis. To the typical W. Indian shells are united those from California, Panama, Madagascar, Japan, N. Holland, N. Zealand, &c.

ha Para The synonymy includes venulata + araneosa + Cumingii + oriola (Ducl. non Lam.) + pindarina + fusiformi + timoria + obesina + tisiphona + memonia + aldinia + oniska + caldania + harpularia + candida + ustulata.

63. 83. Oliva Steeria, Rve. Mazatlan, Ed. Verreaux. = [te:tacea, var.]

86. Oliva Deshayesiana, n. s. Atlas, pl. 3. f. 67, a, b: intermediate between Braziliensis and auricularia. California, teste Duclos. [Certainly not from the West Coast.]

87. Oliva volutella, Lam. + razamola, Ducl. 63.

71. 89. Oliva undatella, Lam. + nedulina, Ducl.; but not ozodona, Ducl., as Rve. 88.YS.

89. Oliva lineolata, Gray in Wood's Ind. Test. = purpurata, Swains. = dama, 73. Ducl. [i. e. dama, Goodall in Wood, = kneolata, Gray MS. in B. M., Zool. Beech. Voy.]

Acapulco; teste Ducl. "We know nothing of this 91. Oliva selasia, Ducl. 75. remarkable shell but the specimen figured by the author.'

96. Oliva mutica, Say+rufifasciata, Rve. [assigned by error to the Californian O. bætica, var.]+fimbriata, Rve.

In the most recent and among the most valuable of the contributions to our knowledge of local faunas, Mollusques de l'île de la Réunion, par M. G. P. Deshayes,' Paris, 1863, occur very unexpectedly the following species connected with the West Coast, either by name or by identity. The list of 560 species from this little island, which the researches of M. Maillard has brought to light, contains several West Indian forms and a large number known in the Central Pacific and even the Sandwich Islands.

No. 38. Page. 16. Chama imbricata, Brod.

19. Lucina tigerina, Ln. "Common on sands, with Capsa deflorata, as at the Antillea" 47. the Antilles.

65.

23. Modiola cinnamomea, Chem. [Botula, Mörch, teste A. Ad.]
40. Chilon sanguineus, Desh. pl. 6. f. 4-7. [Non Ch. sanguineus, Rve. An the West Coast shell= Ischnochilon limaciformis, Sby., the Bourbon 110. species may retain its name, especially if, as is probable, it belongs to another genus.]
68. Solarium [Torinia] variegatum, Lam.

197

74. Turbo phasianellus, Desh. Minute edition of T. petholatus; nacreous. [Not congeneric with T. phasianella (Phil.), C. B. Ad., Panama shells, 216. no. 282.]

233. 79. Natica Marocchiensis, Lam., Q. and G. Astr. pl. 66. f. 16-19. [?=maroccana, Chem.]

307. 95. Cerithium uncinatum, Gmel. Thes. Conch. pl. 180. f. 78, 79. [?= C. uncinatum (Gmel.), Sby.]

393. 114. Purpura patula, Lam. [Linn.].

403.

115. Purpura l'ochrostoma (Bl.), Rve. [Sistrem].
115. Purpura (Coralliophila) madreporarum, Sby. [l' Rhizocheilus. = Lepto-**4**05. conchus monodonta, Quoy, teste Gld. Otis, p. 215.]

446. 132. Terebra luctuosa, Hds.

- 140. Cerithium Gallapaginis (A. Ad.), Sby. Thes. **560**. [Sby.'s species = interruptum, Mke., non C. B. Ad., no. 198, rough var.] *
- 93. Smithsonian Institution.—At the time of the first Report, the temperate fauna of the West Coast was only known through sources liable to error, the collectors having visited other regions besides Oregon and California, and the species described by American authors being but imperfectly understood in this country. The large accession to the number of authentic species, the important elimination of synonyms, and the assignment of ascertained loca-

The review of the remainder of the first Report, nos. 69-92, will be postponed till after the production of the new materials, which are almost entirely from American sources. 1963.

lities, which are placed on record in this Report, are due almost entirely to the stimulus afforded to science in general, and to this branch especially, by the Smithsonian Institution at Washington, D.C. The fund bequeathed by Mr. Smithson, "for the increase and diffusion of knowledge among men, having been declined by the Universities to which it was offered in the Old World, is held (in trust only) by the U.S. Government *. It is administered by a permanent body of Regents, according to a constitution drawn-out at their instance by the Secretary, Prof. J. Henry, LL.D. It may be safely stated that to his unswerving consistency, cautious judgment, and catholic impartiality it is mainly owing that, during various political and social changes, the Institution has not only steered clear of all party bias in the United States, but has distributed its advantages with equal hand on both sides of the Atlantic. The Natural History department is under the special superintendence of the Assistant-Secretary, Prof. Spencer Baird, M.D., whose indefatigable zeal, fertility of resource, and thorough knowledge of the requirements of the science have enabled the Institution, by a comparatively small outlay, not only to amass in a few years an enormous store of accurate materials, but also to eliminate from them a series of publications on various important branches of American zoology. The contributions of the Smithsonian Institution to our knowledge of the West Coast fauna may be considered under [A] its collections and [B] its publications.

[A] Smithsonian Collections.—According to the present law, all collections made in expeditions fitted out by the Government become the property of the Smiths. Inst., with liberty to exchange duplicates. Its museum, therefore, is rich in types; and its liberal policy allows of all duplicates being transmitted to public collections, to schools of science, or to individuals engaged in special departments of study. Not being forced into an unalterable plan of operations, like many leading museums of the Old World, permission was given to send nearly the whole of the molluscs to this country, that they might be compared with the Cumingian, the Brit. Mus., and other leading collections. The importance of thus establishing a harmony of nomenclature for species on both sides of the Atlantic can scarcely be over-estimated. The previous want of it can be abundantly seen by comparing paragraphs 39, 43, 54, &c., in the first and in this Report. The West Coast collections belonging to the Smiths. Inst. are mainly from the following sources:

a. The United States Exploring Expedition, under Capt. (afterwards Admiral) Wilkes, 1837–1840, v. par. 43.

b. The North Pacific Exploring Expedition, under Capt. Rogers, 1853–1855. Collector, Dr. Stimpson.

6. The Pacific Railroad Expedition, 49th parallel, under Governor J. J. Stevens, 1853-54. Collections made in Puget Sound by Dr. Suckley, and at Columbia River by Dr. J. G. Cooper. Dr. Suckley also collected at Panama.

* The war has but to a limited extent curtailed the funds and interfered with the operations of the Institution.

† The Cunard Steamship Company have most liberally conveyed these stores across the Atlantic, free of cost. The British and American Governments have allowed special facilities for passing the Custom Houses without derangement. Similar acts of liberality and courtesy are continually afforded to the Smiths. Inst.—The materials for this Report have been placed unreservedly in the hands of the writer, although he went to Washington as a complete stranger, and with no other introduction than his published writings.

- d. The Pacific Railroad Survey, under Lieutenant R. S. Williamson, 1853. Collector, Dr. A. L. Heermann.
- The Pacific Railroad Survey, under Lieutenant R. S. Williamson, 1855.
 Collector, Dr. J. S. Newberry.
- f. United States and Mexican Boundary Survey, under Major W. H. Emory, 1852. Collector, Arthur Schott.
- g. Colorado Expedition, under Lieutenant J. C. Ives. Collector, Dr. J. S. Newberry.
- A. The United States North-West Boundary Survey, under Com. A. Campbell. Collectors, Dr. Kennerley and Mr. George Gibbs.

Besides the above official explorations on the American side, during a period in which the British Government only fitted out a single expedition coordinate with h, the Smiths. Inst. has received a large number of private collections from their correspondents, of which the following are the principal:—

i. Mr. Jas. G. Swan, from Port Townsend, Cape Flattery, Neeah Bay, and the neighbouring shores of Vancouver; at intervals, during many years.

- j. Dr. J. G. Cooper, early private collections from Shoalwater Bay and various stations in California and from Panama; and lately the dredged collections of the California State Geological Survey, of which a portion were sent in advance by Dr. Palmer.
- L. California Academy of Natural Sciences, duplicates of their collection, with the privilege of inspecting unique specimens.

1. Dr. E. Vollum, U.S.A., from Fort Umpqua.

- m. Lieutenant W. P. Trowbridge, from coast of Oregon and California.
- Dr. J. A. Veatch, from the peninsula of Lower California, and especially from Cerros Island.
- o. Mr. A. S. Taylor, from Monterey.

p. Mr. Andrew Cassidy, from S. Diego.

- q. Rev. J. Rowell, now of San Francisco, from various stations in both faunas, and especially from Sta. Crux, and the Farallones Is.
- r. Mr. John Xantus, of the U. S. Coast Survey, from Cape St. Lucas. Specimens were received through him from Socorro Island (one of the Revillagigedo group), Tres Marias and Margarita Island.
- Captain C. P. Stone, from Guaymas and the northern part of the Gulf of California.
- t. Captain C. M. Dow, from the coast of Central America.

w Dr. J. H. Sternberg, from Panama.

- v. Dr. J. H. Frick, Mr. James Hepburn, and others, from San Francisco.
- w Mr. C. N. Riotte, U. S. Minister to Costa Rica, from Puntas Arenas.

2. Mr. W. H. Pease, of Honolulu, collections made by his agents at various stations on the coast, particularly at Margarita Bay.

Collections have also been received from various expeditions already tabulated in the first Report; and from stray quarters not here included because their accuracy may admit of doubt. The species received from the most important of these sources will be enumerated in their order; of the remainder, exact lists may be consulted by the student in the Smithsonian Catalogues, and the combined results will be found tabulated as 'Pacific Railroad Expeditions' or 'Smithsonian Collections.'

[B] Smithsonian Publications.—These may be classed under three heads.
(1.) Works published by the U. S. Government, with more or less of assistance derived from and through the Smiths. Inst. (2.) The 'Smithsonian Contributions to Knowledge,' printed in 4to, and answering to the 'Trans-

actions' of English learned societies; and (3.) The 'Miscellaneous Collections,' in 8vo, answering to the 'Proceedings' of the societies:—

- (1.) The series of ten 4to volumes, called 'Pacific Railroad Reports,' contains a complete résumé of the natural history of the western slope of North America. The Recent and Tertiary Fossil Mollusca will be analyzed in the following pages. Accounts have also been published of the natural history of other expeditions.—The annual volumes of 'Reports of the Regents of the Smithsonian Institution,' published by the U.S. Government, contain exact accounts of the assistance rendered to the expeditions by the Smiths. Inst., as well as lectures and articles on special subjects. In these will be found full particulars of the principles which regulate the natural-history workings of the Institution.
- (2.) The only paper bearing on our present inquiry as yet published in the 'Contributions' is on the "Invertebrata of the Grand Manan," by Dr. W. Stimpson, which should be consulted by all who desire to institute a comparison between the sub-boreal faunas on the two sides of the Atlantic.
- (3.) The 'Miscellaneous Collections' are all stereotyped, and very freely circulated. Among them will be found "Directions" for collecting specimens of natural history, with special instructions concerning the desiderata on the These have been widely distributed among the various government officials, the employés of the U.S. Coast Survey, and the variously ramified circulating media at the command of the Smiths. Inst.; and have already borne a fair share of important results, although the war has greatly impeded the expected prosecution of natural-history labours. "Check Lists" have been published "of the Shells of North America, by I. Lea, P. P. Carpenter, W. Stimpson, W. G. Binney, and T. Prime," June 1860. No. 1 contains the Marine Shells of the "Oregonian and Californian Frovince," and No. 2 of the "Mexican and Panamic Province." They are chiefly compiled from the first British Association Report, with such elimination of synonyms and doubtful species, and addition of fresh materials, as had become available up to the date of publication. They were not intended to be quoted as authorities; and so rapid has been the accumulation of fresh information that no. 1 is already out of date. In the "Terrestrial Gasteropoda," by W. G. Binney, list no. 1 contains the "species of the Pacific coast, from the extreme north to Mazatlan," to which many additions have since been made. In the list of "Fluviatile Gasteropoda," also by W. G. Binney, "the letter W distinguishes those confined to the Pacific coast, WE is affixed to those found in both sections of the continent, and M designates the Mexican From the starting-point of this list considerable progress has already been made. In the brief list of "Cyclades, by Temple Prime," the Mexican and Central American species are similarly designated; but the western species and those common to the Pacific and Atlantic United States are not distinguished. In the list of "Unionidæ," by Dr. I. Lea, whose lifelong devotion to the elucidation of that family is everywhere gratefully acknowledged, the Pacific species are designated by a P. The large series

^{*} The 'Lectures on Mollusca,' in the Vol. for 1860, pp. 151-288, will perhaps be found useful as a digest of classical forms. It was to have been illustrated with copies of woodcuts, kindly promised by Dr. Gray, and since placed at the disposal of the Smiths. Inst. by the courtesy of the Trustees of the British Museum; but, unfortunately, the blocks were not to be found at the time. They will appear, however, in forthcoming Smithsonian publications. The 'Lecture on the Shells of the Gulf of California,' in the Vol. for 1859, pp. 195-219, contains in a popular form much of the information distributed through the Brit. Mus. Maz. Cat.

of specimens, representing varieties and ages, in Dr. Lea's private collection are well deserving of close study. Their owner shares the liberality of Mr. Cuming in making them available for all purposes of scientific inquiry.

The Smiths. Inst. has just issued from the press the first part of the Bibliography of North American Conchology, previous to the year 1860,' by W. G. Binney, containing references to all printed information on North American shells by native writers. It is divided into "§ A. American descriptions of North American molluscs; § B. American descriptions of foreign molluscs; § C. Descriptions of foreign species by American authors in foreign works." The work is prepared with unusual care and completeness, and with the accurate judgment which characterizes all Mr. Binney's writings. It contains, under every separate work or paper, "a list of species therein described or in any important manner referred-to, together with their synonymy, locality, and the volume, page, plate, and figure relating to them." The second part, containing similar references to American species described by European writers, is now passing through the press. Mr. Binney has most kindly sent the proofs to the writer (as far as p. 287), which have been freely used in preparing this Report, and have supplied various important sources of information. It undertakes to provide for the whole North American continent what has been here attempted for the West Coast; and in much greater detail, as not only the first description, but all subsequent quotations are duly catalogued. It may be regarded as a complete index of references to all works on North American malacology. The student, in making use of it, will remember that it is only with the Pulmonates that Mr. Binney professes an intimate acquaintance. For these the work may be regarded as complete. But, in other departments of the science, only those shells which are assigned by the authors to North America are quoted; consequently a large number of species are passed-over which are truly American, but are assigned to other places, or described without locality. Also, species really belonging to other faunas, but falsely attributed to North America, duly appear as though genuine; and the additional localities frequently assigned by the authors (which are often the real habitats) are seldom quoted. Moreover the citations stop at Mazatlan; consequently, the tropical fauna of the West Coast is but imperfectly represented. Lastly, the authors are not presented in chronological or indeed in any other ostensible order; but it is promised that the necessary information will be given in the index on the completion of the work. The student will further bear in mind that for many reasons no second-hand reference can serve the same purpose as a consultation of the original book. With these cautions the work will be found invaluable by all who are engaged in working-out American species; and great thanks are due to Mr. Binney for undertaking the extreme labour of its compilation, and to the Smiths. Inst. for supplying the expense of its publication. Probably no such work has yet been printed on the malacology of any other country.

Lastly, there is now in preparation a complete series of hand-books on North American malacology, copiously illustrated with wood engravings, and containing a digest of all that is known in each department. The marine shells of the Atlantic are being described by Dr. Stimpson, who is now also engaged in the dissection of the Freshwater Rostrifers; the marine shells of the Pacific are placed in the hands of the writer; the Pulmonates will be thoroughly worked-out by Mr. Binney, the Melaniadæ by Mr. Tryon, and

the Cycladidæ by Mr. Prime. Thus it appears that the malacologists have been unusually zealous in advancing their before somewhat slumbering study; and that the Smiths. Inst. has displayed unexpected liberality in preparing and issuing from the press works of a comprehensive character, for the "increase and diffusion of" what will hereafter be regarded as an important

branch of "knowledge among men."

94. North Pacific Exploring Expedition.—In the year 1853, Dr. W. Stimpson, well known in very early life for his dredging-researches and observations on the marine animals of the Atlantic coast, accompanied Captain Ringold as naturalist to the U.S. "North Pacific Exploring Expedition." principal object was to obtain more correct information with regard to the Japan seas and the extreme north of the Pacific, and it was only incidentally that it visited the Californian province. However, Dr. Stimpson's extensive dredgings in the flords of Japan developed the interesting fact, that while the southern shores presented a fauna essentially Indo-Pacific in its character, and abounding in the usual Cones, Cowries, Olives, &c., the northern slopes of the same islands presented an assemblage of forms far more analogous to the fauna of the Sitka and Vancouver region, and containing many species common to the American coast. During the course of the voyage dredgingcollections t were made by Dr. Stimpson at Madeira, Cape of Good Hope, Sydney Harbour, Coral Seas, Port Jackson, Hong Kong (also by Mr. Wright; New Ireland, Lieut. Van Wycke; Gasper Straits, Squires; vicinity of Canton, presented by Mr. Bowring; interior of Hong Kong, Wright); China Sea; Whampoa; Bonin Island; Loo Choo Island; Ousima; Katonasima Straits; Kikaia; Kikaisima; Kagosima [alas!]; Hakodadi; Taniogesima (also Wright, Kent, Kern, Boggs, Carter); Simoda; Niphon (also Brook); Arvatska Bay, Kamtschatka; Amincheche Island, Avikamcheche Island, Behring Straits; Seniavine Straits, Arctic Ocean (also Captain Rogers); San Francisco; (Puget Sound and Shoalwater Bay, Dr. Cooper, Cat. no. 1849-1856); Tahiti (also Captain Stephens, Kern), Hawaii (also Garrett; Sea of Ochotsk, Captain Stevens). All these were duly catalogued, with stations, depths, and other particulars, and living animals preserved in spirits after being drawn. The expedition appears to have returned in 1856. Although Dr. Stimpson devoted his chief attention to articulate animals, and molluscs occupied but a subordinate share of his attention, it is safe to say that in this short period he collected more trustworthy species of shells, with localities, than were received at the Smiths. Inst. from the united labours of the naturalists of Captain Wilkes's celebrated expedition. Through some unaccountable cause, certain of the most valuable boxes were "lost" between New York and Washington; the remainder were placed in the hands of Dr. Gould for description, with the MS. catalogue, a copy of which forms the "Mollusca, Vol. I.," nos. 1-2003, of the Smiths. Mus. Fortunately, Dr. Gould embraced the opportunity to bring the uncertain shells to London, and compare them with the Cumingian Collection.

[†] A fuller account of this expedition is here given than is justified from its contributions to the W. American fauna, because no other information respecting it is as yet available to the malacological student.

Thus a large body of species, named from types, was prepared for the New World; but, unfortunately, through imperfect packing and the practice of marking by numbers only, much of the value of this identification was lost. The new species were described by Dr. Gould in the 'Boston Proc. Soc. Nat. Hist., 1859-1861; and on completion of the series, the author collected the papers embodying the new species of the two great scientific expeditions, as well as his other scattered publications, and issued them in a most valuable book, entitled 'Otia Conchologica: Descriptions of Shells and Molluscs, from 1839-1862,' Boston, 1862; with "Rectifications," embodying such changes of nomenclature and synonyms as he desired to represent his matured views. In quoting Dr. Gould's writings, therefore, this table should always be consulted. A considerable portion of the specimens have been returned to the Smiths. Inst., of which the larger species are mounted in the collection, and the smaller ones have been sent to the writer to compare with those collected by Mr. A. Adams, which were unfortunately being described in the London journals almost simultaneously. The war has unhappily postponed the intention of publishing the complete lists of species collected and identified with so much accurate care. The following, however, have already been determined by Dr. Gould from the region in which American species occur. The list is given entire (so far as identified), because species as yet known only on one coast of the North Pacific may hereafter be found on the other. It contains (as in the comparison of the Caribbean and West Mexican fauna) (a) species certainly identical, (b) probably identical, (c) "interesting anagues," and (d) representative forms.

1263. Crepidula hystryz, var. Kagosima Bay, Japan. Dead on shore. [=aculeata, Maz. Cat. no. 334.]

1319. Poronia rubra, Mont. Kagosima Bay, Japan. [Vide Maz. Cat. no. 154.] Among sea-weeds and barnacles in 2nd and 3rd levels; rocky shore.

1339. Natica marochiensis [?maroccana; v. Maz. Cat. no. 570]. Kagosima Bay,
Japan. Dead on shore.

1344. Acmæa? Sieboldi; very near patina. Kagosima Bay, Japan. Rocks at l. w. 1351. Torinia variegata, Lam. Kagosima Bay, Japan. [Vide Maz. Cat. no. 484.] Dead on shore

1414. Nassa gemmulata, Lam. [non C. B. Ad.] Kagosima Bay, Japan. 5 fm. sd. 1476. Acar [Barbatia] gradata, Brod. and Sby. Taniogesima, Kagosima Bay, Japan. [Vide Maz. Cat. no. 194.] Dead in ten fm.; sand and shells. 407, 476. Acar [Barbatia] gradata, Brod. and Sby. Port Jackson. 1509. Linear squares at Lam. Taniogesima, Long. [Port Jackson]

1502. Lima squamosa, Lam. Tanicgesima, Japan. [= L. tetrica, Gld., teste Cum.]

The remaining species from these localities are either local or belong to the Philippine and Polynesian fauna. At Simoda and Hakodadi we enter on a mixed fauna.

1574. Haliotis discus, Rve. Simoda and Hakodadi. Rocks at low water, four fm. "Kamtschatkana seems to be the small growth of the same." [It is locally abundant, however, on the West Coast; while discus has never been found there, and is much flatter.]
1577. Lutraria [Schizothærus Nuttallii, Conr.] Hakodadi Bay. Eight fm. sand.

1579. Cytherea petechialis, Lam. Hakodadi Bay. Sand, 4th level.
1582. Tritonium [Chrysodomus] antiquum, Ln. Hakodadi Bay (also Okhotek and
Arctic Oc., 1779). Low-water mark and laminarian zone, on weedy rocks. 1585. Tritonium [Priene] Oregonense, Redf. Hakodadi Bay. Dead on shore, and in twenty fm. Also no. 1955.
1588. Tellina Bodegensis, Hds. Hakodadi Bay. Dead on shore.

1589. Mya arenaria, In. Hakodadi Bay.
 1592. Mercenaria orientalis, Gld. [A West Atlantic type, probably = M. Simpsoni, Otia, p. 169.] Hakodadi Bay. Six fm. sand.

1596. Venus rigida, Gld. [MS. non Gld., Otia, p. 85,= Tapes, var. Petitii. The Japanese shell is Adamsii, Rve., from type]. Hakodadi Bay. Four to

The above occur in connexion with local and with diffused tropical species.

- 1601. Euthria ferrea, Rve. Simoda. Among stones and pebbles, 3rd level. [Al-
- 1601. Euthria ferrea, Rve. Simoda. Among stones and pebbles, 3rd level. [Almost identical with the Cape Horn species, E. plumbea, Phil.]
 1630. Tritonium [Chrysodomus] cassidaria formis, Rve. East Coast of Japan, lat. 37°, and Hakodadi. Twenty fm., black coarse sand.
 1632. Chiton "largest" [f Cryptochiton Stellers]. Hakodadi. On large stones and under shelving rocks, low-water mark.
 1634. Pecten, like [=] Islandicus. Hakodadi. Ten fm. shell-sand.
 1635. Sangunolaria Nuttalkii, Conr., = decora, Hds. Hakodadi. "Possibly = Soletellina obscurata, Dosh." Sand, low-water mark.
 1637. Macoma lata "Grael in Mus. Cum. colorea Chem. processor.

- 1637. Macoma lata, "Gmel. in Mus. Cum., = calcarea, Chem., = proxima, Brown, = sordida, Couth., = Suensoni, Mörch." Hakodadi. 4th level, sandy mud. 1639. Litorina Grænlandica, Chem. Hakodadi. Rocks, 1st level. 1648. Cardium pseudofossile, Rve., = blandum, Gld., perhaps = Californiensis, Desh.

- Hakodadi. Twenty fm. sand.
- 1651. Terebratula [Waldheimia] Grayi, Desh. Hakodadi. Shelly gravel, 8-15 fm. 1665. Leila arctica, Brod. [= Y. lanceolata, J. Sby.]. Hakodadi. Sandy mud, 4-12 fm. Seniavine Str., 10-30 fm.

 1674. Drillia inermis, Hds. Hakodadi. Shelly sand, 4-10 fm.

- 1700. Pecten Yessoensis, Jay. [Probably a var. of Amusum caurinum.] Hakodadi. Weedy mud, 4 fm.
- 1702. Cardium (Serripes) Granlandicum. Awatska Bay, Kamtschatka. Mud, 12 fm. Also Avikamcheche Is., Behring Str., and Arctic Ocean. 1703. Yoldia thracia formis, Storer. Hakodadi. Mud, 12 fm.

- 1704. Mytilus edulis. Hakodadi. Also Avikamcheche Is., Behring Str., and Arctic Ocean. Low-water mark, and in 3rd and 4th level.
- 1705. Cardium Californiense, Desh. Hakodadi. Mud, 12 fm. [= no. 1648.] 1706. Mya truncata. Hakodadi; also Avikamcheche Is. Mud, 6-15 fm. Also
- Arctic Ocean, in mud, 30 fm.
- 1708. Buccinum glaciale. Hakodadi, and Straits of Seniavine, at Amincheche In., Behring Str.

 1710. Tritonium [Chrysodomus] antiquem+deformis, Rve., and vars. Hakodadi and Avikamcheche Is. Gravel, 4 fm.

 Straits of Seniavine.
- 1711. Buccinum tortuosum, Rve., = scalariforme + vars. Straits of Seniavine.

1714. Mya l'arenaria. Hakodadi and Avikamcheche Is.

- 1715. Bullia [Volutharpa] ampullacea, Midd. Hakodadi. Gravel, 5-6 fm.
 1716. Lanistes lævigata, Gray (= discors, Ln., teste Dkr. in Mus. Cum.). Mud,
 20 fm. Hakodadi and Arctic Ocean; common, in nests, 30 fm.; no. 1739.
- 1717. Trichotropis multicaudata [?= Tr. coronata, Otia, p. 121: related to insignis, Midd., teste A. Ad.]. Hakodadi. Gravelly mud, 15 fm.
 1718. [Lepeta] caca, var. concentrica, Midd. Hakodadi and Arctic Ocean.

- 1719. Trichotropis bicarinata, Sby. Hakodadi. Not uncommon in laminarian zone. Arctic Ocean; common.
- Hakodadi; mud, 5-25 fm. Awatska Bay. 1720. Macoma proxima, Brown.
- Arctic Ocean; common, no. 1727.

 1721. Macoma edentula, Brod. and Sby. Hakodadi. Avikamcheche Is.

 1722. Crepidula grandis, Midd. Hakodadi. Okhotsk, 15 fm.; no. 2002.

 1723. Venus fluctuosa, Gld., 1841. ?= astartoides, Beck, 1849. Hakodadi and Arctic
- Ocean; not uncommon. Mud, 5-10 fm.
- 1725. Cardita (Actinobolus) borealis, Conr. Avikamcheche Is., Behring Straits; mud, 5-30 fm. Awatska Bay; 10 fm. mud. Arctic Ocean; common.

 1726. Saxicava pholadis, L.,=rugosa+distorta. Avikamcheche Is., Arctic Ocean. Awatska Bay; on shells, &c. Lam. zone; no. 1729.

 1728. Margarita obscura, Couth. Awatska Bay, Kamtschatka. Mud, 10 fm.
- 1732. Bela turricula., Mont. Awatska Bay; mud, 6-15 fm. Also Seniavine Str.; no. 1782.

1733. Yoldia limatula, Say. Awatska Bay and Arctic Oc. Mud, common, 5-20 fm. 1734. Natica clausa, Brod. Awatska Bay. Mud, 5-15 fm. 1785. Yoldia myalis (or hyperborea). Awateka Bay. Mud, 10 fm. 1786. Leda minuta. Seniavine Str.; Arctic Oc., near Behr. Str. Mud and pebbly sand, 15-30 fm., coarse striss.

1787. Leda minuta, var. Ditto. Mud and pebbly sand, 5-20 fm., fine striss. 1740. Modiolaria corrugata. Ditto. Mud, in nests, 30 fm. 1741. Rhynchonella psittacea. Ditto. Gravel and sponges, 20-30 fm. 1742. Margarita striata, Leach. Ditto. Shelly gravel, common, 15-30 fm. 1744. Admete arctica, Midd. Ditto. Mud, 30 fm. 1745. Admete viridula, Couth. Ditto. Gravel, 4 fm.; mud, 10-30 fm. 1747. Velutina haliotoidea. Ditto. Gravel, 10-25 fm. 1748. Margarita argentata [Gld. Inv. Mass.]. Ditto. Mud, 90 fm.; shelly, 15-25 fm. 1749. Therritella (sp.), Migh. Ditto. Mud, 30 fm.; clean gravel, 4-20 fm. 1750. Trichotropis bicorinata. Ditto. Pebbly mud, 5-6 fm. 1751. Lematia pallida, Brod. Ditto. Mud, 10-30 fm. 1751. Lenatia patita, front. Into. mud, 10-30 fm.
1752. Cylichna triticea, Couth. Ditto. Mud, 15-30 fm.
1753. Velutina [Morvilia] zonata [Gld. Inv. Mass.]. Ditto. On stones, 5 fm.
1754. Nucula temis, Mont. Ditto. Mud, common, 20-30 fm.; pebbly mud, 5-20 fm. Also Hakodadi; sandy mud, 10 fm.; no. 1687.
1756. Trophon clathratus, Linn. Ditto. Mud, 20-30 fm.; gravel, 4 fm.
1757. Lunatia septentrionalis, Beck. Ditto. Gravelly mud, common, 20 fm.; gravel, 4 fm. 1758. Amicula vestita, Sby. Ditto. Gravel, common, 10-40 fm. 1759. Scalaria Granlandica, Chemn. Ditto. Mud, 30 fm. 1760. Lunatia pallidoides. Ditto. Mud, 30 fm. 1760. Limata patitaoides. 19tto. Mud, 30 fm.
1761. Chrysodomus Islandicus, Chemn. Ditto. Mud, 30 fm.
1762. Patella [Lepeta] candida, Couth. Ditto. Mud, 30 fm.
1763. Chiton albus, Linn. Ditto. On shells in mud, 30 fm.
1765. Chrysodomus Schantaricus, Midd. Ditto. Mud, 20-90 fm.
1770. Astarte lactea, Br. and Sby. Arctic Oc. Mud, 30 fm.
1771. Pecten Islandicus, Chemn., var. Arctic Oc. Mud, 30 fm.
1773. Buccinum sundatum (probably bicarinate var. of glaciale). Arctic Ocean. 1774. Buccinum ?undalum, var. pelagica. Arctic Ocean. 1775. Buccinum ? Ochotense, Midd. Arctic Ocean. 1778. Buccinum angulosum, Gray (= glaciale, var.). Arctic Ocean. 1777. Buccinum? tenue, Gray. Arctic Ocean.
1778. Mangelia, like simplex, Midd. Arctic Ocean.
1781. Bela rufa, Mont. Seniavine Str. Pebbly mud, common, 5 fm.
1783. Turritella erosa. Seniavine Str. Mud, 10-20 fm. 1784. Lyonsia Norregica, Chem. Seniavine Str. Pebbly mud, 5 fm. 1785. Trichotropis insignis, Midd. Seniavine Str. Gravel, 10 fm. 1789. Bela decussata, Couth. Seniavine Str. Sandy mud, 10-20 fm. Also Awatska Bay; no. 1730. 1790. Yoldia myalis, Couth. Seniavine Str. Mud, 10-20 fm.; pebbly mud, 5 fm. 1791. Bela harpularia, Couth. Pubbly-mud, 5 fm. 1793. Margarita helicina, Fabr. Behring Str. Clean gravel and algee, 5 fm. 1796. Turtonia [? minuta, Fabr.]. Behring Str. Common on sponges, 20-40 fm. 1798. Lunatia [Acrybia] aperta, Lov. Kamtschatka.
1799. Modiolaria nigra, Gray. Arctic Ocean. 1821. Chama lobata [=exogyra, Jay, non Conr.]. China Sea, west of Formosa. Shell-gravel, 30 fm. 1836. Purpura emarginata, Desh. San Francisco. On rocks in 4th level.
1837. Litorina plena, Gld. San Francisco. On rocks in 3rd and 4th levels,
1838. Acmæa textilia, Gld. San Francisco. On piles and rocks between tides.
1838b. Acmæa patina, Esch. San Francisco. On piles and rocks between tides.
1839. Cryptomya Californica, Conr. San Francisco. On sandy beaches.
1840. Macoma nasuta, Conr. San Francisco. Common in sandy mud, 1. w. 10 fm.
1841. Cardium Nuttallii, Conr. San Francisco. Common in sandy mud, 1. w. 10 fm.

1843. Mytilus edulis, var. San Francisco. On rocks and gravel, 4th level. 1844. Mytilus Californianus, Conr. Near entrance to San Francisco. On rocks

and gravel, 4th level.

1845. Tapes diversa, Sby. San Francisco Bay. Very common, low-water mark

[= V. staminea, Conr., var., = V. mundulus, Rve.; v. anteà, p. 570]. 1846. Chiton [Mopalia] muscosus, Gld. Entrance of San Francisco Bay. uncommon on rocks at low-water mark.

1847. Cryptodon [Schizothærus] Nuttallii, Conr., jun. San Francisco. One sp. 1848. Machæra lucida, Conr. San Francisco. Common. [= M. patula, Portl.]

The shells brought back by the Expedition from Puget Sound and Shoalwater Bay were collected by Dr. Cooper, whom Dr. Stimpson met at San Francisco, and are not here catalogued, as they appear again in his own collections, v. infra, par. 101.

1880. Lithophagus cinnamomeus. China coast, lat. 2310. Dead, 25 fm., sand.

1924. Helix tudiculata, Bin. Petaluma, Cal.; under stems in open grove of scruboak.

1956. Mytilus splendens, Gld. Hakodadi Bay. Rocks below tide-marks, com.

1957. Anomia olivacca, Gld. Hakodadi Bay. On shells or gravelly sand, 10 fm.

Anoma divacea, Gld. Hardard Bay. On shells or gravelly sand, 10 m.
 Cerastoma foliatum, var. Burnettii, Ad. and Rve. Hardard Bay and N. E. part of Niphon. Low-water mark, on rocks and boulders.
 Haliotis Kamtschatkana, Jonas. N. E. shore of Niphon. See no. 1574.
 Purpura Freycinettii, Desh. N. E. shore of Niphon. Common on rocks.
 Purpura Freycinettii, var. with muriciform lamelle. N. E. shore of Niphon.
 Placunanomia macroschisma, Desh. West Coast of Jesso. Gravel, 30 fm.
 Terebratula pulvinata, Gld. Arctic Ocean. Gravel, 30 fm.
 Puncturella noachina. Linn. See of Okhotsk. Gravel, 20 fm.

2000. Puncturella noachina, Linn. Sea of Okhotsk. Gravel, 20 fm. 2001. Astarte lactea, Brod. and Sby. Sea of Okhotsk. Gravel, 20 fm.

2003. Terebratula globosa, Lam. Sea of Okhotsk. Gravel, 36 fm. [Perhaps Californica, Koch.] The following, from among the new species described by Dr. Gould in his

'Otia Conch.,' belong to the same province, and to forms which may be expected to appear on the northern shores of West America. They were first published in the Proc. Bost. Soc. Nat. Hist., under the dates quoted :-

Otia, p. Bost. Proc. S.N.H. 109. 1859. June. Natica severa, Gld., like heros, but with umbilicus resembling unifasciata. Hakodadi, W. S.

Natica russa, Gld., like clausa. Aretic Ocean, W. S. Patella pallida, Gld. Hakodadi. On stones and gravel, 10 fm. Patella grata, Gld. N. E. shore of Niphon. Natica russa, Gld., like clausa. 109. Dec.

115. " 115.

Acmæa dorsuosa, Gld., like patina, var. monticula [monticola], 115.

Nutt. Hakodadi, on rocks of 2nd and 3rd lamin. zone. W. S.
Chiton (Leptochiton) concinnus, Gld., like albus, but with lines of
punctures. Hakodadi, W. S.
Chiton (Acanthochætes) achates, Gld. Kikaia, Hakodadi, W. S.
Chiton (Molpalia) Stimpsoni, Gld., like Blainvillei, without anterior radiating lines. ["On stones, clean bottom, 25 fm.,
and under stones and rocks low-water mark".—Smiths Cer 117. 118.

1859. Dec. and under stones and rocks, low-water mark."-Smiths. Cat. no. 1646. Not to be confounded with M. Simpsoni, Gray.] Hakodadi, W. S.

1860. Sept. Terebratula [? Waldheimia] transversa, Gld., like Grayi, with shorter internal supports: [=Grayi, teste A. Ad.] Hakodadi,

120. Terebratella miniata, Gld., like Zelandica. Apophyses united to central crest. [= Waldheimia Koreanica, Ad. and Rve., teste Rve. from type. "On pebbles, clean bottom, 30 fm." Smiths. Cat. 1597.] Hakodadi, W. S.

Rhynchonella lucida, Gld.; in aspect like T. vitrea, jur.
Trichotropis (Inhinoë) coronata, Gld.; like T. ciliata, Kruger.
Straits of Semiavine, Arctic Ocean, 20 fm. mud. W. S. 120. 131.

Otta, p. Bost. Proc. S.N.H.
122. 1860. Sept. Buccinum Stimpsoni, Gld.; like undatum, but quite distinct.

Avikamcheche Is., Behring Str., W. S. Arctic Ocean, Rodgers. [Not B. Stimpsonianum, C. B. Ad.] 123. Neptunea (Sipho) terebralis, Gld.; like Icelandica. Arctic Oc. Trophon incomptus, Gld.; like crassus. Hakodadi, W. S. Bela turgida, Gld. Kamtschatka, W. S. 125. 22 Oct. 134. 1861. Margarita ianthina, Gld.; like Schantarica. Arctic Ocean. 153. Mar. Margarita albula, Gld.; like an overgrown arctica. 154. " " Ocean., W. S. 154. Margarita mustelina, Gld. Hakodadi; low water, W. S. Gibbula redimita, Gld.; like nivosa, A. Ad. Hakodadi, W. S. Lyonsia ventricosa, Gld.: shorter than Norveyica. Hakodadı, 2-8 fm., sandy mud, W. S. ["?= navicula, jun." A. Ad.] Lyonsia (Pandorina) flabellata, Gld.; like arenosa. Arctic Ocean, W. S.

Theora lubrica, Gld. Hakodadi; common in mud, 6 fm., W. S. " " 159. 22 " 162. " 162. 33 " 162. 99 Panopea fragilis, Gld. Hakodadi, W. S.
Panopea ?generosa, var. sagrinala. Awatska Bay, Kamtschatka, W. S. ["Epidermis projects | in., as in Glycimeria.
Mud, 12 fm." Smiths. Cat. 1701.] 163. 27 163. 22 99 Corbula venusta, Gld. Hakodadi, 5-8 fm., shelly sand, W. S. Solen strictus, Gld.; like corneus. Hakodadi, W. S. Solen gracilis, Gld. [non Phil.] Hakodadi, sandy beaches, W. S. Machæra sodalis, Gld.; like velum. Hakodadi, fm., mud, W.S. Solemya pusilla, Gld.; like velum. Hakodadi, fm., mud, W.S. Tallian lubring Gld.; like velum. Hakodadi. 164 75 99 165. " " 165. " " 165. " " 165. 25 Tellina lubrica, Gld.; like felix and fabagella. Hakodadi, 6 fm., sandy mud, W. S. 167. 22 " Saxidomus aratus, Gld.; like V. maxima, Phil. San Francisco.
[Described as 4.5 in. long, yet] smaller than Nuttallii. ["Open bays at Sir F. Drake's; l. w., sand." Smiths. Cat. 1842.]

Venus (Mercenaria) Stimpsoni, Gld.; like the Atlantic forms.

Hakodadi, 6 fm., W. S. 168. 22 " 169. 27 Mysia (Felania) usta, Gld.; like an Astarte. Hakodadi, 8 fm., 170. 22 " sandy mud, W. S. Montacata divaricata, Gld. Hakodadi, on Spatangus-spines, W. S. Apr. 3. "Apr. Montacata divaricata, Gld. Hakodadi, on Spota: gues-spines, W.S.

5. ""Nucula (Acila) insignis, Gld.; like mirabilis: [identical, teste
A. Ad.] E. Japan, lat. 37°, and Hakodadi, W.S. ["20 fm.
black coarse sand."—Smiths. Cat. 1628.]

7. ""Mytilus corruscus, Gld.* Hakodadi; common on rocks between
tide-marks, W.S. [?=M. splendens., no. 1956.]

7. ""Pecten latus, Gld.; resembles generally P. senatorius, is still more
like P. [Amusium] caurinus. Hakodadi, shelly mud, 10 fm.,
W.S. [Non P. latus, Gld., in U.S. Expl. Exped. Shells,
Otia, p. 95, = P. Dieffenbachii, Gray, teste Cuming.]

95. The United States Expedition to Japan, under Commodore M. C. Perry, 175 177. 177. 1852-4, was not undertaken for scientific purposes; and no special provision was made either for collecting or describing objects of natural history. A

95. The United States Expedition to Japan, under Commodore M. C. Perry, 1852-4, was not undertaken for scientific purposes; and no special provision was made either for collecting or describing objects of natural history. A large number of shells, however, were obtained, and identified by Dr. Jay of New York. In Vol. II. of the 'Narrative of the Expedition, &c.' (Washington, 1856, pp. 289-297) is given a list of Japanese shells, with descriptions and figures of the (supposed) new species. The following are related to the molluses of the West Coast †. Specimens of the most important may be seen in the Cumingian Collection.

* The M. metabilis; described on the same page from Kagosima, is a Septifer; it is pre-

sumed that the learned author did not open a specimen.

† The student should also consult, for related forms, the 'Mollusca Japonica' by Dr.
W. Dunker, Stuttgart, 1861;—like all the other works of the same author, most valuable
for the patient care, accurate judgment, and enlarged experience displayed; but relating
chiefly to the subtropical portion of the fauna.

Page.	Pl.	Fig.	
Page. 202.	1.	7,10.	Mya Japonica, n. s. Volcano Bay, Is. Yedo. Closely related to M. arenaria: [identical, teste A. Ad.].
292.	1.	8,9.	
2 93.	14. 3.	1,2. } 3,4. }	Pecton Yessoensis, n. s. Hakodadi. [Resembles Amusium caurinum, Gld.]
295.	` 5 .	16.17.	Purpura septentrionalis, Rve. [= P. crispata, var.] ? Japar.
295.	5.	13,15.	? Bullia Perryi, n. s. Bay of Yedo, one sp. dredged. [= Volutharpa ampullacea, Midd.]
296.			Venerupis Nuttalli, Conr. [Saxidomus]. Japan.
296.			Tellina secta, Conr. Japan.
296.			Tapes decussata, Ln. [Probably T. Petitii, var. or Adamsii. Japan.]
296.			Ostrea borealis, Ln. Japan.
296.			Ianthina communis, Lam. Japan.
296.			Ianthina prolongata, Blainv. Japan.

96. At the time that Dr. Gould was describing Dr. Stimpson's Japanese shells in the Boston Proc. Ac. N. S., Mr. A. Adams, R.N., one of the learned authors of the 'Genera of Recent Mollusca,' was making extensive and accurate dredgings in the same seas. The new genera and species have been and are being published, in a series of papers, in the Ann. & Mag. Nat. Hist. and in the Proc. Zool. Soc., preparatory to an intended complete work on the mollusc-fauna of the Eastern North Pacific. The collections of Mr. Adams have already displayed the Japanese 'existence of several species, as Siphonalia Kellettii, Solen sicarius, Homalopoma sanguineum, &c., before supposed to be peculiar to the West coast. Unfortunately for our present purpose, while the comparison of specimens was going on, Mr. Adams was unexpectedly called to service on board H.M.S. 'Majestic,' and was obliged to pack up his collections. Enough has been ascertained, however, to prove that it will be unsafe henceforth to describe species from either coast without comparison with those of the opposite shores.

97. Pacific Railroad Reports.—As it is necessary, in studying any fauna, to make comparisons far round in space, so it is essential to travel far back in time. The fullest account of the fossils of the West Coast of America is to be found in the 'Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Ocean,' which form ten thick quarto volumes, copiously illustrated with plates, and published by the U.S. Senate, Washington, 1856. The natural-history department was conducted under the superintendence and with the aid of the Smithsonian Institution; and science is under special obligations to Prof. Spencer S. Baird, the Assistant Secretary, for his Reports on the Vertebrate Animals. It would hardly be expected in Europe that the best résumé of the zoology, the botany, and the geology of the vast region between the Great American desert and the Pacific should be found in a railroad survey. Unfortunately, it has not been the custom to advertize and sell the valuable documents printed at the expense of the U.S. Government, in the ordinary channels of trade. They often become the perquisites of the members of Congress, and through them of the various employés, by whom they are transferred to the booksellers' shelves. fifth volume of the series is devoted to the explorations of Lieut. Williamson; the second Part contains the Report by W. P. Blake, geologist and minerologist of the expedition. In the Appendix, Art. II., are found "Descriptions of the Fossil Shells," by T. A. Conrad. They were first published in the

This extremely costly and valuable assemblage of documents was selling in Washington, in 1860, at £5 sterling the set.

'Appendix to the Preliminary Geological Report,' 8vo, Washington, 1855. They are divided into, I. "Eocene," and II. "Miocene and Recent Formations.

I. Eocene (all from Cañada de las Uvas *).

Plate II. 1. Cardium linteum, Conr., n.s. Allied to C. Nicolleti, Conr.

Dominia alta, Conr., n.s. "

Meretrix Uvasana, Conr., n.s. 3. 3. " 4. Meretrix Californiana, Conr., n.s. Allied to M. Poulsoni, Conr. 4. "

Crassatella Uvasana, Conr., n.s. 5.

Crassatella alta, Conr., n.s. In small fragments, but abundant, as at Claiborne, Al.

Mytilus humerus, Conr., n.s. 10.

8. Cardita planicosta, Lam., = Venericardia ascia, Rogers. First 6. discovered in Maryland in 1829, by Conr.; occurs abundantly in Md., Va., Al., and is quite as characteristic of the American as of the European Eocene period.

Natica? atites, Conr., 1833. Na'ica? gibbosa, Lea, 1833, or N. semilunata, Lea; also found at 7. 10. Claiborne, Al.

Natica alreata, Conr., n.s. 8. 11.

- Turritelia U. asana, Conr., n. s. Allied to T. obruta, Conr.,=T. 12. 12. linenta, Lea, from Claiborne, Al.
- 9. Volutatithes [? Volutilithes] Californiana, Conr., n.s. Resembles 13. V. Sayana, Conr.

P Busycon B'akei, Conr., n.s. 13. 14.

Clavatula Cali ornica, Conr., n.s. Allied to C. proruta, Conr., of Claiborne Eocene.

II. Miocene and Recent Formations (from various localities).

- Cardium mo lestum, Conr., n.s. San Diego. [May be Hemicar-III. 15. 16. dium biangulatum, jun.]
- Nucula decisa, Conr., n.s. Resembles N. divaricata of the Ore-19. 17. gon Miocene. [Closely allied to N. castrensis, &c., but too imperfect to determine.] San Diego.

16. III. 18. Corbula Diegoana, Conr., n.s. San Diego. 19.

- Meretrix uniomeris, Conr., n.s. Monterey Co. 20. 27. 20.
- Meretrix decisa, Conr., n.s. Ocoya Creek. 22 22. 21.
- Meretrix Tula ena, Conr., n.s., [in list, "Tularana" in text].
 From a boulder in Tulare Valley. [Comp. Tapes gracilis, Gld.]

28. 22.

Tellina Diegoana, Conr., n.s., San Diego.
Tellina congesta. Conr., n.s. [Appears a Heterodonax, allied to bimaculata, Lam.] Abundant at Monterey, Carmello, and San 14, 18 (23. & 21 Diego.

Tellina Pedroana, Conr., n.s. [?= T. gemma, Gld.] 17. 24. formation. San Pedro.

Area microdonta, Conr., n.s. Resembles A. ara Maryland Miocene. Miocene, ?Tulare Valley. 25. Resembles A. arata, Say, of the

[•] The existence of Eccene strata on the Pacific slope is ascertained by a single boulder of very hard sandstone, which, though very small, furnished fifteen species. Of these, three correspond with forms from Claiborne, Alabama; and the "finger-post of the Eccene" appears in its usual abundance. Mr. Conrad characterizes the specimens as "beautifully perfect;" which would not have been supposed from his descriptions and figures. They "seem to indicate a connexion of the Atlantic and Pacific Oceans during the Eccene against a supposed from the case of the Eccene against the second and the supposed from the second that the supposed from the second that the supposed from the second that the second that the second that the supposed from the second that t the Eccene period;" and the author expects that "when the rock shall have been discovered and investigated in situ, fresh forms will be obtained, with which we are already familiar in eastern localities."

Plate Fig. IV. 31. No. 28. Tapes diversum, Sby. [= Tapes staminea, Cont., var. Petiti, Desh.] Recent formation. San Pedro. (III. in text) Desh.] Recent formation. ш 25. 27. Saxicava abrupta, Conr., n.s. [Probably the shortened form of Petricola carditoides, Conr.] Recent formation. San Pedro. Petricola Pedroana, Conr., n.s. [Recent formation San Pedro. 28. [Allied to P. ventricosa, Desh.] Schizothærus Nuttalli, Conr., "n.s." = Tresus capax, Gld. Recent ſV. 83. 29. formation. San Pedro. PLutraria Traskei, Conr., n.s. III. 23. 30. [Not improbably = Saxidomus Nuttallii, Conr., jun.] ?Miocene. Carmello.

Mactra Diegoana, Conr., n.s. Like M. albaria, of the Oregon 45. 31. Miocene. [Resembles Mulinia angulata, Gray.] P Miocene. San Diego. Modiola contracta, Conr., n.s. [Very like M. recta, Conr.] ! Miocene. Monterey Co. Recent formation. 32. **35.** [Probably=M. edulis, jun.] Mytilus Pedroanus, Conr., n.s. 40. 33. Recent formation. San Pedro. Pecten Deserti, Conr., n.s. [Resembles P. circularis.] Mio-34. cene. Carrizo Creek, Colorado Desert. Anomia subcustata, Conr., n.s. [? = Placunanomia macroschisma.]
Miocene. Colorado Desert. Allied to A. Ruffini.
Ostrea venpertina, Conr., n.s. [Resembles O. lurida, var.] Miocene. Colorado Desert. Like O. subfalcata, Conr. 34. 35. 86-38. 36. Ostrea Heermanni, Conr., n.s. Colorado Desert.
Penitella spelæa, Conr., n.s. Recent formation. San Pedro. 37. 38. 39. Fissurella crenulata, Sby. [= Lucapina c.] Recent formation. San Pedro. Crepidula princeps, Conr., n.s. [= C. grandis, Midd.] Recent formation. Santa Barbara. VI. 52. 40. V. 39 41. Narica Diegoana, Conr., n.s. P Miocene. San Diego. Trochita Diegoana, Conr., n.s. [Like T. ventricosa; but may be Galerus contortus.] ? Miocene. San Diego. Crucibulum spinosum, Conr., n.s.† Recent formation. San Diego. 42. 42. 49. 44. Nassa interstriata, Conr., n.s. [= N. mendica, Gld.]. formation. San Pedro. Nassa Pedroana, Conr., n.s. 48. 45. [Comp. Amycla gausapata and its congeners.] † Recent formation. San Pedro. 51. 46. Strephona Pedroana, Conr., n.s. [Comp. Olivella bætica.] Recent formation. San Pedro. Litorina Pedroana, Conr., n.s. [= L. plena, Gld.] Recent formation. San Pedro. Stramonita petrosa, Conr., n.s. [Is perhaps Monoceros lugubre.] 47. 48.

Mr. Conrad regards the "coriaceous cup as characteristic of the genus." It appears a subgenus of *Pholadidea*, differing in the form of the plate. Mr. Tryon, "Mon. Pholad.," p. 66, restricts it to the *Penitella penita*, which (according to his diagnosis) has one central and two anterior dorsal plates. The closely related *P. ovoidea* he leaves in the original genus, as having "two dorsal accessory valves," although he allows that "its position cannot be accurately determined on account of the loss of its donar valves." Conrad's fossil has the shape of P. ovoidea; but although he says that it is "widely distinct" from P. penita, I am unable to separate it from the ovoid form of that species, which will be found in the Smithsonian series.

?-. Tulare Valley.

[†] This is certainly Sowpinsonian series.
† This is certainly Sowpinsonian series, to which Conrad gives a doubting reference. In the text he gives it as "pinosum, Conr.," in his table marking it as "nov. sp."
† Conrad compares N. interstriata to N. trivittata, Say, and N. Pedroana to N. tunata, Say, and states that the two Atlantic species are "associated with each other both in the sea and in the Miocene deposits of Virginia and Maryland." As the two correlative species are found together living and fossil on the Pacific side there is pressured in the sea. are found together, living and fossil, on the Pacific side, there is presumptive evidence for their having descended from a common stock.

```
P. Gratelupia mactropsis, Conr., n.s. [? = Donax punctatostriatus.]
P. Miocene. Isthmus of Darien. Resembles G. Hydeana, Cour.
                            Eocene.
                       Meretriz Dariena, Conr., n.s. [Comp. Cyclina subquadrata.] ?Miocene. Isthmus of Darien.
                50.
                51.
                        Tellina Dariena, Conr., n.s. PMiocene. Isthmus of Darien.
víi
                52.
                        Natica Ocoyana, Conr., n.s. [Marked 51 on plate: err.] Ocoya
                            or Posé Creek.
         67.
                68.
                        Natica geniculata, Conr., n.s. Ocoya Creek. Resembles N.
                            alveata.
                       Bulla jugularis, Conr., n.s. Ocoya Creek.
Pleurotoma transmontana, Conr., n.s. [Marked 60 on plate: err.
                54.
                55.
         69.
                            Closely resembles Chrysodomus dirus, Rve.] Ocoya Creek.
                       Pleurotoma Occyana, Conr., n.s. [Omitted in the text.] Occya Cr. Syctopus [Ficula.] Occyanus, Conr., n.s. Occya Creek. Turritella Occyana, Conr., n.s. Occya Creek.
                56.
                57.
VIII.
         73.
                5ε.
         76.
                        Colus arctatus, Conr., n.s. Ocoya Creek.
                5€.
                       Tellina Ocoyana, Conr., n.s. Ocoya Creek.
Pecten Nevadanus, Conr., n.s. Very like N. Humphreysii, Mary-
         75.
                60.
```

77. 61.

land, Miocene. Ocoya Creek.

Pecten calilliformis, Conr., n.s. Very like P. Madisonius, Say,
Virginia, Miocene. Ocoya Creek. TX. 83. 62.

The following species are not described in the text, but quoted in the list. Vide p. 320:-

VIII. ?78. 63. Cardium, sp. ind. Ocoya Creek. 64. Arca, sp. ind. Ocoya Creek. Ocoya Creek. 280. 65. Solen, sp. ind. Dosinia, sp. ind. Ocoya Creek. î81. 66. Venus, sp. ind. Ocoya Creek.
Cytherea? decisa, Conr. Ocoya Creek. 279. 67. 68.

Ostrea, sp. ind. San Fernando.
Pecten, sp. ind. San Fernando.
Turritella biseriata, Conr., ?n.s. San Fernando.
Trochus, sp. ind. Benicis. 69. 70.

71.

72. VII. **?58.** ?59. 73. Turritella, sp. ind. Benicia

?71. 74. Buccinum ?interstriatum. San Pedro

Anodonta Californiensis, Lea. Colorado Desert.

Mr. Conrad, than whom there is no higher authority for American Tertiary fossils, considers the age of the Eocene boulder ascertained; and that "the deposits of Santa Barbara and San Pedro represent a recent formation, in which (teste Blake) the remains of the Mammoth occur: and the shells indicate little, if any, change of temperature since their deposition." But he acknowledges that the intermediate beds are of uncertain age. Those on Carrizo Creek he refers to the Miocene, some characteristic species being either identical with the Eastern Miocene or of closely related forms. addition to the species tabulated in this Report, he quotes, as having been collected in California by Dr. Heermann, "Mercenaria perlaminosa, Conr., scarcely differing from M. Ducatelii, Conr.; and a Cemoria, Pandora, and Cardita of extinct species, closely analogous to Miocone forms." The casts from Ocoya Creek were too friable to be preserved, and are figured and described from Mr. Blake's drawings; these also are regarded as Miocene. The San Diegan specimens are too imperfect for identification; they are referred to the Miocene by Conrad, but may perhaps be found to belong to a later

Several fossils are figured in plates vii. and viii., to which no reference is made in the xt. It is unsafe to conjecture the genus to which many of them belong, but it is presamed that they relate to the indeterminate species here quoted.

The types of these species in the Smithsonian Museum and the twoperfect to determine specifically with any confidence; and by no means it. suitable condition to allow of important conclusions being drawn from them.

98. The third article in the Appendix to the same volume of Reports contains a "Catalogue of the Recent Shells, with Descriptions of the New Species," by Dr. A. A. Gould. The specimens were (apparently) in the hands of Dr. Gould for examination when he prepared the MS. for the first Report; and some of them were included in the "Mexican War Collections," B. A. Report, pp. 227, 228. "The freshwater shells were collected in the Colorado desert and other localities, the land and marine shells between San Francisco and San Diego." The following is the list of species as determined by Dr. Gould, pp. 330-336. The specimens belong to the Smithsonian Institution, where a large portion of them were fortunately discovered and verified. They were collected by W. P. Blake, Esq., and Dr. T. H. Webb.

Plate. Fig.

1. Ostroa, sp. ind. Parasitic on twigs; thin, radiately lineated with Ostrea, sp. ind. Parasitic on twigs; thin, radiately lineated with brown. [= O. conchanhila, Cpr.] Another species, elongated, solid, allied to Virginica [var. rufoides]. San Diego.
 Pecten monotimeris, Conr. San Diego.
 Pecten ventricosus, Sby., + tumidus, Sby. [Dead valves, of the form equisulcatus.] San Diego.
 Mytilus Pedulis [= M. tro sulus, Gld., anteà]. San Francisco.
 Modiola capax, Conr. San Diego.
 Venus Nuttallii, Conr. [= V. succincta, Val.] San Pedro.
 Venus fuctifraga, Sby. San Diego.
 Tapes grata, Say,= T. discors, Sby., "=straminea, Conr." San Pedro.

- Pedro.
- XL. 19,20. 9. Tapes gracilis, Gld., n.s. Prel. Rep. 1855. [Quite distinct from every other Tapes known from the coast. It is supposed by Dr. Cooper to be the young of Saxidomus aratus, which in shape and pattern exactly accord with the figure and diagnosis. But the "Tapes" is figured without sculpture. The shell was not found at the Smiths. Inst.] San Pedro, Blake.

 10. Cyclas, sp. ind. Colorado Desert.

- 11. Cardium cruentatum, Gld., n.s. Prel. Rep. 1855. [P. Z. S. 1856, X7. 21, 22. p. 201, = C. substriatum, Conr.] San Diego. Blake, in text.] San Pedro.
 - 12. Lucina orbella, Gld. [="Mysia (Sphærella) tumida," Conr.] Sec. Pedro.

13. Lucina Nuttallii, Conr. San Pedro.

 Mesodesma ?rubrutincta, Sby.† San Pedro.
 Tellina vicina, C. B. Ad. [Dead specimens of = Heterodonax ("Psammobia," var.) Pacifica, Conr.] San Diego.

16. Tellina secta, Conr. San Pedro.

17. Sphænia [Cryptomya] Californica, Conr. San Diego.

18. Petricola carditoides, Conr., = cylindracea, Desh. Monterey; San Pedro.

19. Solecurtus Californiensis, Conr. San Diego.

20. Gnathodon Lecontii, Conr., = G. trigonum, Petit. Colorado Desert.

[Lecontei is probably the large Texan species: trigonus = mendicus is a very distinct shell from Mazatlan.

Petitii = rigida, pars.

† No "Mesodesma" was found among the shells returned to the Smithsonian Institution, nor has any been heard-of from the coast. Dr. Gould's shell may have been Semele

pulchra, which was in the collection.

[•] Neither Dr. Gould, nor Conrad himself, in his later geological writings, appears to have called to mind the true *T. staminea*, to which the Smithsonian shells belong. It is the northern representative of *T. grata*, but quite distinct: v. synonymy under Vesses

No. 21. Lottia ecabra, Gld. [non Nutt., Rve.:=spectrum, Nutt., Rve.] San Francisco. 22. Lottia patina, Esch. San Pedro. 23. Scurria pallida, Gray, = Lottia mitra, Brod. [= Scurris mitra, Esch., = L. conica, Gld., anteà.] San Pedro. 24. Calyptræa hispida, Brod. [= Crucibulum spinosum, Sby.] San Pedro; San Diego.

25. Crepidula incurca, Brod. San Pedro.

26. Bulla nebulosa, Gld. San Diego. 27. Bulla nebulosa, Gld. San Diego.
27. Bulla (Haminea) virescens, Sby. San Diego.
28. Bulla (Haminea) vesicula, Gld., n.s. Prel. Rep. 1855. [P. Z. S. 1856, p. 203.] San Diego, Blake.
XI. 27, 28. 29. Bulla (Tornatina) inculta, Gld., n.s. Prel. Rep. 1855. S. Diego. [P. Z. S. 1856, p. 203. Appears to be a Utriculus.]
30. Trochus maestus, Jonas [= Chlorostoma funebrale, A. Ad.,= marginatum, Nutt. Jonas's species is S. American.] San Diego.
XI. 25, 26. 31. Phasianella compta, Gld., n.s. Prel. Rep. 1855. [P. Z. S. 1856, p. 204.] San Diego, Webb, Blake.
32. Litorina, sp. ind. [var. plena. Gld.] San Diego. p. 204.] San Diego, Webb, Blake.

32. Litorina, sp. ind. [var. plena, Gld.] San Diego.

33. Melampus, sp. ind. [olivaceus, Cpr.] San Diego.

34. Oliva biplicata, Sby. San Pedro.

XI. 23, 24. 35. Potamis pullatus, Gld., n.s. Prel. Rep. 1855. [= Cerithidea fuseata, Gld., n.s. P. Z. S. 1856, p. 206. = C. sacrata, var., teste Nuttall, Cooper.] San Diego, Webb, Blake.

XI. 6-9. 36. Amnicola protea, Gld., n.s. Proc. Bost. Soc. N. H., March 1855. Colorado Desert (Gran Jornada), Webb, Blake.

XI. 10, 11. 37. Amnicola longinqua, Gld., n.s. Proc. Bost. Soc. N. H., March 1855. Colorado Desert (Cienaga Grande), Blake.

XI. 12-18. 38. Planorbis ammon, Gld., n.s. Proc. Bost. Soc. N. H., Feb. [Otia, Mar. in text] 1855. A very variable species. Colorado Desert and Ocoya Creek, Webb, Blake. and Ocoya Creek, Webb, Blake.

39. Physa humerosa, Gld., n.s. Proc. Bost. Soc. N. H., Feb. 1855.
Colorado Desert, Blake; Pecos River, Webb.

40. Succinea, sp. ind. Ocoya Creek.
41. Helix Vancouverensis, Les. San Francisco. XI. 1-5.

42. Helix San-Diegoensis, Lea. Point Reyes. [No such species, teste Binney.]

43. Helix infumata, Gld. [Otia, p. 215.] Point Reyes. 44. Helix Oregonensis, Lea. Cypress Point.

99. The fossils of the various Western expeditions were being arranged in 1860 in the Smithsonian Museum by Prof. J. S. Newberry, M.D., a naturalist of rare experience and accomplishments, and author of "Reports on the Geology, Botany, and Zoology of Northern California and Oregon." Washington, 1857. They are embodied in vol. vi. of the 'Pacific Railroad Reports.' The following is a list of the fossils, which were described by Mr. Conrad in pp. 69-73, having first appeared in the Proceedings of the Academy of Natural Sciences, Philadelphia, Dec. 1856, to which page-references are added.

Dr. Newberry's Californian Fossils.

Page. Plate Schizopyga Californiana, Conr., Phil. Proc. Dec. 1856, p. 315. [Partaking of the characters of Cancellaria and Pyramidella.] Santa Clara, Cal.

Cryptomya ovalis, Conr., p. 314. [Closely approaching the recent species, C. Californica.] Monterey Co.

Thracia mactropsis, Conr., p. 313. Monterey Co.

^{*} The Crepidule returned in this collection were adusce and ?rugosa, var, 1863.

```
II.
                        Mya Montereyana, Conr., p. 818. [Figure resembles Periploma argentaria.] Monterey Co.

? Mya subsinuata, Conr. [Comp. Macoma inquinata.] Monterey Co.
Arcopagia medialis, Conr., p. 314. Like A. biplicata, Conr., of
the Maryland Miocene. [Closely resembles Lutricola atta, Conr.]
          "
                         Tapes linteatum, Conr., p. 314. California.
Arca canalis, Conr., p. 314. Santa Farbara.
Arca trilineata, Conr., p. 314. Santa Barbara.
"
"
          "
"
          "
                   10. Arca congesta, Conr., p. 314. California.
11. Azinæa Barbarensis, Conr. [Closely resembles Pect. intermedius.]
7Ï.
        пт.
                   12.
                          Mulinia densata, Conr., p. 313. P Santa Barbara and shores of
22
                             Pablo Bay.
                          Dosinia longula, Conr., p. 315. Monterey. Dosinia alta, Conr., p. 315. Monterey.
"
                          Pecten Pabloensis, Conr. San Pablo Bay.
22
          22
                          Pallium Estrellanum, Conr., p. 313. Estrella Valley. Janira bella, Conr., p. 312. Santa Barbara.
"
                          Janira bella, Conr., p. 312.
                   16.
72.
                   17.
                            Ostrea Titan, Conr., Phil. Proc. 1855. San Luis Obispo.
                   17a. j
                          Pandora bilirata, Conr., p. 267.
bicarinata.] Santa Barbara.
73.
                   25.
                                                                              [Closely resembles Kennerlia
                           Cardita occidentalis, Conr., 1855, p. 267. [? = C. ventricosa, Gld.]
 "
                             Santa Barbara.
                         Diadora crucibuliformis, Conr., 1855, p. 267.
                                                                                                   [? = Puncturella
                             cucullata, Gld.] Santa Barbara.
                                 Fossils of Gatun, Isthmus of Darien.
          V.
72.
                           Malea ringens, Swains. Gatun.
                    19.
                           Turritella altilira, Conr. Gatun.
 22
           "
                           Turritella Gatunensis, Conr. Gatun.
Triton, sp. ind. Gatun.
                    20.
           22
 "
                    20.
 "
           "
                           ? Cytherea Dariena, Conr. [The figure does not appear conspe-
```

The northern fossils are supposed by Mr. Conrad to be of the Miocene period, and not to be referable to existing species. Those from Sta. Barbara, however, are clearly of a very recent age, and probably belong to the beds searched by Col. Jewett. But by far the most interesting result of Dr. Newberry's explorations was the discovery of the very typical Pacific shell, Malea ringens, in the Tertiary strata on the Atlantic slope of the Isthmus of Darien, not many miles from the Caribbean Sea. The characters of this shell being such as to be easily recognized, and not even the genus appearing in the Atlantic, it is fair to conclude that it had migrated from its head waters in the Pacific during a period when the oceans were connected. We have a right, therefore, to infer that during the lifetime of existing species there was a period when the present separation between the two oceans did not exist. We may conclude that species as old in creation as Malea ringens may be found still living in each ocean; and there is, therefore, no necessity for creating "representative species," simply because, according to the present configuration of our oceans, we do not see how the molluscs could have travelled to unexpected grounds.

cific with that in the Blake collection, no. 50.] Galun.

100. In vol. vii. of the Pacific Railroad Reports, part 2, is the Geological Report, presented to the Hon. Jefferson Davis, then Secretary of War, by Thos. Antisell, M.D. He states reasons for believing that during the Eccene period the Sierra Nevada only existed as a group of islands; that its final uplifting was after the Miocene period; and that during the whole of that

period the coast-range was entirely under water. The Miocene beds are above 2000 feet in thickness, and abound in fossils generally distinct from those of the eastern strata. There is nothing in California answering to the Northern Drift of the countries bordering on the Atlantic. The molluses of Dr. Antisell's Survey were described by Mr. Conrad, pp. 189-196. He remarks that "the fossils of the Estrella Valley and Sta. Inez Mountains are quite distinct from those of the Sta. Barbara beds, and bear a strong resemblance to the existing Pacific fauna. The Miocene period is noted, both in the eastern and western beds, for the extraordinary development of Pectinide, both in number, in size, and in the exemplification of typical ideas." It also appears to be peculiarly rich in Arcada, which are now almost banished from that region, while they flourish further south. The large Amusium caurinum and the delicate Pecten hastatus of the Vancouver district, as well as the remarkable Janira dentata of the Gulf, may be regarded as a legacy to existing seas from the Miocene idea; otherwise the very few Pectinids which occur in collections along the whole West Coast of North America is a fact worthy of note. Mr. Conrad has "no doubt but that the Atlantic and Pacific oceans were connected at the Eocene period;" and the fossils here described afford strong evidence that the connexion existed during the Miocene epoch. All the species here enumerated (except Pecten deserti and "Anomia subcostata") were believed to be distinct from those collected by the preceding naturalists.

Dr. Antisell's Californian Fossils.

```
Plate. Fig. II. 1, 2.
                           Hinnites crassa, Conr. [?= H. gigantea, Gray.] Sta. Mar-
       [L err. typ.]
                              garita.
                          Pecten Meekii, Conr. San Raphael Hills.
Pecten deserti, Conr. Blake's Col., p. 15. Corrizo Creek.
Pecten discus, Conr. Near Sta. Iñez.
            L 1.
 "
191.
                           Pecten magnolia, Conr. [Probably = P. Jeffersonius, Say, Virginia.] Near Sta. Iñez.

Pecten altiplicatus, Conr. San Raphael Hills.
            L
                2.
          III.
                          Pallium Estrellanum, Conr. [Janira.] Estrella.
Spondylus Estrellanus, Conr. [?Janira.] Estrella.
Tapes montana, Conr. San Buenaventura.
                 3, 4.
                 3.
192.
                 3, 5.
                 1.
1, 2.
         VII.
                           Tapes Inezensis, Conr. Sta. Iñez.
                          Venus Pajaroana, Conr. Pajaro River.

Arcopayia unda, Conr. Shore of Sta. Barbara and Estrella.
          īv.
                 3, 4.
                              [Closely resembles A. biplicata; ? = Latricola alta.]
                           Cyclas permacra, Conr. Sierra Monica. Resembles C. panduta, Conr., = Lucina compre sa, Lea.
         VII.
                4
                          Cyclas Estrellana, Conr. Estrella.
Arca Obispoana, Conr. San Luis Obispo.
Partuderma Inezana, Conr. [Like P. crassatelloides.] Sta.
                 6.
198
                 2, 4.
                              Iñez Mts.
                           Crussuteuu collina, Conr. Sta. Iñez Mts.
Ostrea subjecta, Conr. "May be the young of O. Panzana."
           VI.
                 1, 2.
           IL.
                 3.
                              Sierra Monica.
           IL.
                           Ostrea Panzana, Conr. Panza, Estrella, and Gaviote Pass.
                           Dosinia alta, Conr. Salinas River.
         VII.
                2.
                           Docinia longula, Conr. Salinas River.
 194,
          VL .4.
                          Dosinia montana, Conr. Salinas River.
                           Dosinia subobliqua, Conr. Salinas River. Also a small Venus,
                              a Natica, and a Pecten.
                          Mytilus Inezensis, Conr. Sta. Iñez.
                 2, 3.
                           Lutraria transmontana, Conr. Allied to L. papyria, Conr.
                 6.
                              Los Angeles; also San Luia.
           6
```

Page 101 Axinea Barbarensis, Conr. Los Angeles. [f=intermedius.]
? Mactra Gabiotensis, Conr. Gaviote Pass. May be a Schs zodesma. Associated with Mytilus sp. and Infundibutus VII. . 3. Glycimeris Estrellanus, Conr. Panza and Estrella Valleys Allied to Panopæa reflexa, Say. [?=P. yenerosa, Gld.] Perna montana, Conr. S. Buenaventura. Allied to P. maxillata VII. 5.

195. VII. 3. Trochita costellata, Conr. Gaviote Pass. " VIII. Turritella Inezana, Conr. Sta. Iñez Mts. Turritella variata, Conr. Sta. Iñez Mts. 4.

VIII. 5. "

Natica Inexana, Conr. [? Lunatia Lewisii.] Sts. Iñez Mts. X. 5, 6.

As before, the fossils appear to be in very bad condition. The succeeding palæontologists who have to identify from them are not to be envied. Their principal value is to show what remains in store for future explorers. The extreme beauty of preservation in the fossils collected by Col. Jewett, rivalling those of the Paris Basin, and sometimes surpassing the conspecific living shells, makes us astonished that so large a staff of eminent men, employed by the Government, made such poor instalments of contribution to malacological science. The plan, too often followed, of remunerating naturalists, not according to the skilled labour they bestow, but according to the number of "new species" they describe, is greatly to be deprecated. Further knowledge concerning the old species may be more important in scientific inquiries than the mere naming of new forms. It is generally a much harder task to perform, and, therefore, more deserving of substantial as well as of honourable acknowledgment.

101. The shells collected on the North Pacific Railroad Survey were intrusted to W. Cooper, Esq., of Hoboken, New Jersey, for description: Dr. Gould being occupied with preparing the diagnoses of the N. Pacific E. E. species. Judge Cooper was at that time the only naturalist in America known to be actively engaged in studying the marine shells of the West Coast, of which he has a remarkably valuable collection. He had rendered very valuable service to the Smithsonian Institution by naming their specimens. Unfortunately, there is such great difficulty even in New York city (of which Hoboken is a suburb) in obtaining access to typically named shells, as well as to many necessary books *, that, notwithstanding the greatest care, errors of determination are almost sure to arise.

The "Report upon the Mollusca collected on the Survey, by Wm. Cooper," forms No. 6 of the Appendix, pp. 369-386, and errata. (Unfortunately the

* Both Judge Cooper and Dr. Lea informed me (1860) that they had not been able even to see a copy of the plates to the U.S. Expl. Exped. Mollusca. Through special favour, I was enabled to obtain a series of the proofs to work by. The Smithsonian Institution, though intrusted with the keeping of the collections, was not favoured with a copy until after the war began, when the whole series was granted by Congress. Judge Cooper had derived great assistance from the British Association Report, and has communicated many corrections in it. In the alterations of synonymy, and in defining the limits of specific variation, I have had the benefit of his counsel and experience; and have rarely felt compelled to differ from him. Having himself collected extensively in the West Indies, he had excellent opportunities of comparing fresh specimens from the now separated oceans. I was fortunate enough to meet his son, Dr. J. G. Cooper, at the Smithsonian Institution, and to examine the types of the species he collected (which are here enumerated) with the advantage of his memory and knowledge. His later contributions to the malacology of W. America will be afterwards enumerated: his valuable Treatise on the Forests and Trees of North America will be found in the Smithsonian Reports, 1858, pp. 246-280.

work had been carelessly printed.) It contains the following species, tho localities quoted in the text from other sources being here omitted:-

Pse. 369. Murex foliatus, Gmel., = M. monodon, Esch. (Cerostoma). San Diego, ? foss:1, Cassidy.

Murex festivus, Hds. Dead. San Diego, Cassidy.

Triton Oregonensis, Redfield (non Jay, nec Say) = T. cancellatum, Midd.,

Rve., non Lam. Straits of De Fuca, Suckley, Gibbs, J. G. Cooper.

370. Chrysodomus antiques, var. Behringiana, Midd., one specimen. Straits of De

- Fuca, Suckley. [Comp. Chr. tabulatus.]

 Chrysodomus Middendorfii, Coop., n. s., = Tritonium decemcostatum, Midd. One specimen on the shore of Whidby's Island. Straits of De Fuca, J. G. Cooper. [= Buc. liratum, Mart. This being a remarkable instance of a "representative species," it requires to be minutely criticized. Judge Cooper compared his specimen with 130 eastern shells, and noted the difference with the country of Middendorfic Resistance of Middendorfic Resistance of Middendorfic Resistance. ences with great fulness and accuracy. A series of Middendorff's Pacific shells having been brought to England by Mr. Damon, and sold at high prices, I made a searching comparison of one of them with the eastern specimens furnished me by Judge Cooper and other most trusty naturalists. According to the diagnosis of Middendorffis, it should be referred to C. decemcostatus, Say, and not to the De Fuca species, as it agrees in all respects with the eastern peculiarities quoted, except that the riblets near the canal are rather more numerous and defined. As it might be suspected that Mr. Damon's shells were mixed, I have made a similar comparison with a shell from the N. W. coast, sent to the Smiths. Inst. by Mr. Pease, and with the same result. On examining the specimens in the Cumingian Collection, in company with A. Adams, Esq., we were both convinced that the eastern and western forms could not be separated. In the similar shells collected by Mr. Adams in the Japan seas there are remarkable variations in the details of sculpture.]
- 871. Chrysodomus Sitchensis, Midd. [=incisus, Gld.,=dirus, Rve.]. Str. De Fuca, Suckley, Gibbs.

Nassa mendica, Gld. Puget Sound, Suckley.

Nassa Gibbsii, Coop., n. s. "Resembles N. trivittata more than N. mendica."

Port Townsend, Puget Sound. [In a large series, neither Dr. Stimpson nor I were able to separate this species from N. mendica. Similar variations are common in British Nassa. Picked individuals from the Neeah Bay series would probably be named trivittata, if mixed with eastern shells.]

Parpura lactuca, Esch., + M. ferrugineus, Esch., = P. septentrionalis, Rve. Puget Sound, Suckley, Gibbs; Shoalwater Bay, Str. de Fuca, J. G. Cooper. "Abounds on rocks and oyster-beds in Shoalwater Bay, the form and

amount of rugosity depending on station. The oyster-eaters are smooth even when young."—J. G. C.

372. Purpura ostrina, Gld., = P. Freycinetii, Midd., non Desh. + P. decemcostata [Coop., non] Midd. Rocks above low-water mark; from mouth of Hood's

Canal to Str. Fuca; Puget Sound, common, J. G. Cooper.

Purpera lapillus [Coop., non] Linn. [= P. saricola, Val.] Str. De Fuca, Puget Sound, J. G. Cooper. "Found with P. ostrina, and equally common." Some varieties run into the New England form of P. lapillus, sufficiently nearly to justify the identification; but the bulk of the specimens are easily distinguished by the excavated columella. They pass by insensible gradations to *P. ostrina*, Gld., which is a rare and extreme variety. Many of the shells called *P. Freycinetii* by Midd. are certainly referable to this species. Some forms pass towards the true *P. Freycinetii*, Desh., while others are equally close to the very different *P. emarginata*, Desh.]

**Purpura emarginata, Desh., = P. Conradi, Nutt. MS. "Upper California,"

Trask; San Diego, **Troubridge. [This appears to be exclusively a southern form a compalar way.]

form = saxicola, var.

Monoceros engonatum, Conr., = M. unicarinatum, Sby. San Pedro, Dr. Trask. 578. Monoceros lapilloides, Conr., = M. punctatum, Gray. San Pedro, Dr. Trask.

```
Page.
373. Columbella gausapata, Gld. Str. de Fuca, Suckley.
          Columbella valga [Cooper, non] Gld. [= Buccinum corruyatum, Rve.] St.
              de Fuca, Suckley.
          Natica Lewisii, Gld., = N. herculea, Midd. Puget Sound, J. G. Cooper, Suck-
             ley. "Shell sometimes remarkably globose, sometimes with spire much produced." W. C. "Abundant throughout the N.W. sounds, and collected in great numbers by the Indians for food. In summer it cravls above high-water mark to deposit its eggs" in the well-known sand-coils,
              which are "beautifully symmetrical, smooth, and perfect on both sides."-
              J. G. C.
J. G. C.

Potamis pullatus, Gld. A variable species. U. Cal., Trask.

374. Melania plicifera, Lea. Very common in rivers, W. T., J. G. Cooper.

Melania silicula, Gld. [= one of the many vars. of M. plicifera, teste Lea].

In rivers, W. T., Nisqually and Oregon, J. G. Cooper.

Melania Shortaënsis, Lea, MS. [= Shastaënsis, Lea]. Willopah River, J. G.
              Cooper.
         Amnicola Nuttalliana, Lea, Phil. Trans. pl. 26. f. 89. Columbia River, J. G.
              Cooper.
          Amnicola seminalis, Hds. U. Cal., Trask. [Belongs to Dr. Stimpson's new
          genus, Flummicola.]
Turritella Eschrichtii, Midd. [= Bittium filosum, Gld.]. Puget Sound, Suck-
              ley, Gibbs.
         "Litorina rudis, Gld., Stn." [Cooper, non Mont.]. Shoalwater Bay, De Fuca, J. G. Cooper, Suckley, Gibbs. "Very abundant on the N.W. coast, where it presents the same varied appearances as our eastern shell."—W. C.
              [To an English eye, it appears quite distinct. L. rudis, Coop., with sub-tenebrosa, Midd., and modesta, Phil., are probably vars. of L. Sitkana, Phil., = L. sulcata, Gld.]
         Litorina scutulata, Gld. On rocks, from the head of Puget Sound to De Fuca,
              J. G. Cooper.
J. G. Cooper.

Litorina planaxis, Nutt. [= L. patula, Gld.]. San Luis Obispo, Dr. Antisell.

375. Trochus filosus, Wood, = T. ligatus, Gld., = T. modestus, Midd. Str. de Fuca,

J. G. Cooper; U. Cal., Trask. [= T. costatus, Maxt.]

Trochus Schantaricus [Coop., non] Midd. [= Marg. pupilla, Gld., = M. calostoma, A. Ad.] Str. de Fuca, J. G. Cooper, abundant.

Haliotis Kamtschatkana, Jonas. Nootka Sound, Capt. Russell, teste Trask.

Haliotis corrugata. San Diego, Cassidu.
         Haliotis splendens. San Diego, Cassidy.

Haliotis rufescens. San Diego, Cassidy.

Haliotis Cracherodii. (None of the rare var. Californiensis.) S. Diego, Cassidy.
  "
         Figurella nigropunctata, Sby. Two specimens sent by Dr. Trask as coming from Catalina Is., U. Cal. [Pimported].
         Fisurella aspera, Esch., ?= cratitia, Gld., ?= densiclathrata, Rve. [= Lincolni, Gray. This is certainly Gould's species from type; but Reeve's shell is southern, and appears distinct.] U. Cal., Lieut. Troubridge.
376. Nacella instabilis.
         Acmæu pelta.
                                               The few shells collected of this family are mostly imper-
         Acmæu persona.
  "
                                                   fect, but appear to belong to the species quoted: for
         Acmæa spectrum.
                                                   the synonymy of which, reference is made to the Bri-
         Acmæa scabra.
                                                   tish Association Report.
          Acmæa æruginosa.
  "
          Scurria mitra.
                                                   Still fewer materials, among which the quoted species were identified. [The "submarmoreus," both of
          Chiton muscosus.
          Chiton submarmoreus.
         Chiton lignosus. | var.] Chiefly from Oregon.

Heliz fidelis, Gray,= Nuttalliana, Lea. Forests W. of Cascade Mountain,
W. T., J. G. Cooper.
  "
         Helix Iownsendiana, Lea. "Common in open prairies near the sea, but not near Puget Sound," W. T., J. G. Cooper.
```

Page.
878. Helix Columbiana, Lea, = labiosa, Gld. "In wet meadows from Vancouver to the coast, not near Puget Sound," W. T., J. G. Cooper.
877. Helix Vancouverensis, Lea [+sportolla, Gld., teste Bland]. "West of Cacade Mountain; most abundant under alder-groves; also on Whidby's Island," W. T., J. G. Cooper.
Helix derin, Gld., = Ba-kervillei, Pfr. Two sp. in damp woods, near Vancouver, W. T., J. G. Cooper.
Helix tudiculula. Binn. Rare, with the last, Vancouver; also Washington

Helix tudiculata, Binn. Rare, with the last, Vancouver; also Washington Territory, J. G. Cooper.

- Succinea Nuttalliana, Lea. Rare and dead, at Vancouver, J. G. Cooper.

 Limax Columbianus, Gld. "Abundant in dense, damp spruce-forests, near
 Pacific coast; grows to 6 inches, and is smooth, not rugose, when living,"
- 378. Limnea umbrosa, Gld. Lake Oyosa, Okanagan River, J. G. Cooper.
- Limnaa emarginata, Say. Lake Oyosa, Okanagan River, J. G. Cooper. Limnaa jugularis, Say. Lake Oyosa, Okanagan River, J. G. Cooper.

Limnæa emaryemen,
Limnæa jugularie, Say. Lake Oyosa, Ukanagan
Dhusa slongata, Say. Near Puget Sound, J. G. Cooper.
Panda in W. T., J. G. Coope

Limnaa jugularus, Say.

Physa elongata, Say. Near Puget Sound, J. G. Cooper.

Physa heterostropha, Say. Ponds in W. T., J. G. Cooper.

Physa bullata, Gld. MS. Lake Ovosa, W. T., J. G. Cooper.

Ancylus caurinus, Coop., Pn. s. [42] = A. Nuttalli, Hald., Coop. MS.] Black

River, near Puget Sound, J. G. Cooper.

Planorbis corpulentus, Say. Lake Ovosa, W. T., J. G. Cooper.

Planorbis trivolvis, Say. Exceedingly abundant in shallow lakes near Van-

- "Planorbis trivolvis, Say. Exceedingly abundant in shallow lakes near Vancouver, W. T., J. G. Cooper.

 "Planorbis planulatus, Coop., n. s. "A small carinated species, found only in lakes on Whidby's Island," J. G. Cooper. [Comp. P. opercularis, Gld.]

 379. Bulla nebulosa, Gld. Bay of S. Pedro, Trask.

 "Bulla nebulosa, Gld. Bay of S. Pedro, Trask.

 "Bulla nebulosa, Gld. Bay of S. Pedro, Trask.

Bulla tenella, A. Ad., in Sby. Thes. pl. 134. f. 104 [?]. Puget Sound, one sp., Suckley. [?= Haminea hydatis.]

Ostrea edulis, Coop. [non Linn. := O. hurida, Cpr.]. De Fuca and Puget Sound, Gibbs; Shoalwater Bay, Cooper. "Small in Puget Sound; finer in Shoalwater Bay, which supplies S. Francisco market; large at Vancouver's Island; very large near mouth of Hood's Canal."

[Placun] anomia macroschisma, Desh. De Fuca, Gibbs; Nootka Sound, Capt.

Russell.

Pesten courinus, Gld. De Fucs, Suckley. One of the specimens measures 23 inches in circumference and 8 in. across.

330. Pecten rentricosus, Sby., + tumidus, Sby. [= ?var. æquisulcatus, Cpr.]. Upper

Cal., Trask; San Diego, Cassidy.

- Mytilus edulis, Ln. Shoalwater Bay, Cooper. "As abundant as in Europe and N. England, with the same variations, and when eaten occasionally causing urticaria."—J. G. Cooper.
- causing urticaria. —J. G. Cooper.

 Mytilus Culsfornianus, Conr. Puget Sound, Port Townsend, Suckley, Gibbs;
 Upper Cal., Trask. One specimen is 9\(\frac{1}{2}\) inches long.

 Modiola capax [Cooper, non] Conr. [= M. modiolus, Ln.]. Not common. Str. de Fuca, Gibbs, Cooper.

 Modiola flabellata, Gld. Puget S. and Str. de Fuca, Gibbs. [= M. recta, var.]

 Lithophague, sp. ind., like falcatus. [Probably Adula stylina, Cpr.] Rocks
 near mouth of Umpqua River, Oregon, Dr. Vollum.

881. Area grandis, Coop. [non Brod. and Sby., = A. multicostata, Sby.]. One sp.

living. San Diego, Cassidy.

Margaritana margariti/era, Lea, = Alasmodonta falcata, Gld. River Chehalis, &c., W. T., Cooper; Shasta River, Or., Trask. After careful comparison with eastern U. S. specimens, and those from Newfoundland and Europe, Judge Cooper agrees with Dr. Lea that the N.W. shells are at most a slight variety. "The most abundant of the freshwater bivalves, and the only one yet found in the Chehalis, the streams running into Puget Sound, and most branches of the Columbia. No species is found in the streams running into Shoalwater Bay. Eaten by the Indians E. of the Cascade Mountains, J. G. C.

Page 381. Anodonta angulata, Lea, + A. feminalis, Gld. Plentiful in Yakima River, W. T., Cooper. A series of specimens of various ages leads Judge Cooper to endorse Dr. Lea's opinion of the identity of the two species.

Anodonta Oregonensis, Les. Rivers of W. T., Cooper.

", Anodonta Wahlamatensis, Lea. Lagoons in Sacramento River, Dr. Trask.
382. Cardium Nuttalli, Conr. Shoalwater Bay and Puget Sound, Cooper; San
Franc., Dr. Bigelow, Trask. "The most abundant clam of Shoalwater Bay, inhabiting sandy mud, a few inches below the surface. The Indians feel for them with a knife or sharp stick with great expertness. In July many come to the surface and die, ? from the sun's heat."

come to the surface and die, ? from the sun's heat."

Cardium quadragenarium, Conr. One valve. San Luis Obispo, Dr. Antisell.

Lucina Californica, Conr. San Diego, Cassidy.

Cyclas, sp. ind. Whidby's Island; pools near Steilacoom, Cooper.

Venus staminea, Conr., + Venerupis Petitii, Desh., + Venus rigida, Gld. [pars],

+ Tapes diversa, Sby. Shoalwater Bay and Puget Sound, Cooper, Suck
ley; San Francisco, Trask; San Diego, Lieut. Troubridge. [To the
above synonymy, by Judge Cooper, the large series of specimens in the
Smithsonian Mus. compels an assent. He considers Tapes straminea, of
Sby. Thes., to be a variety of V. histrionica, but it more probably = T.

grata, as Dr. Gould appears to have considered it, having copied Sowerby's
error. Conrad named it, not from the colour, as was supposed when quoting Conrad named it, not from the colour, as was supposed when quoting it as "straminea," but from the thread-like sculpture (teste Conr. ipa.). Whatever be the form, colour, or sculpture of the shell, Judge Cooper remarks in all the same characters of teeth and hinge; we may add also, of

the pallial sinus.]

883. Saxidomus Nuttalii [Coop., non] Conr., + Venerupis gigantea, Desh., + Venus maxima, Phil. [?]. Near Copalux River, south of Shoalwater Bay, common at Puget Sound, Cooper; Bodegas, Cal., Trask. "Much superior to the Atlantic quahog as food, but called by the same name. Its station is in somewhat hard sand, near l.-w. mark," J. G. C. [Judge Cooper regards all the Saridomi of the coast, except S. aratus, as one species. The southern form, "with rough concentric strise and brown disc," is Conrad's species; "others from Oregon are much smoother, without regular strise." These are S. squalidus, Desh. Dr. Cooper found "a fossil variety, in coast-banks 10 feet above sea-level, which is well figured in Midd. and (less distinctly) by Desh. A Californian specimen measures 4.8 in. across." The fossils, through disintegration, often assume the aspect of Venus Kennerleyi, the former margins remaining as varical ridges, while the softer interstices have perished.

Venus lamellifera, Conr., = Venerupis Cordieri, Desh. San Diego, Cassidy 384. Lutraria maxima, Midd., = L. capax, Gld. [= Schizothærus Nuttalli, Conr.] Shoalwater Bay, Cooper. San Francisco, Trask. "Lives buried nearly 2 feet in hard sand, near l. w. mark, its long siphons reaching the surface; also in many parts of Puget Sound up to near Olympia. It is excellent food, and a chief article of winter stores to the Indians, who string and smoke them in their lodges. Length, 7 in. The burrows are found in the cliffs, 10 feet above high water, with all the other Mollusca now living; and two, not now found, were then common [viz. ?...]. The Indians have no tradition as to the elevation, and the ancient trees show no signs of the irregular upheavings which raised the former levels of low water, by successive

stages, to a height now nearly 100 feet," J. G. C.

Tellina nasuta, Conr. Common, from L. Cal. to the Arctic Seas. Shoalwater Bay, Cooper; Puget Sound, Suckley; San Francisco, Trask.

Tellina edentula [Cpr., Coop., not Brod. and Sby., = Macoma secta, var. edulis, Nutt.]. Puget Sound, Gibbs.

Tellina Bodegensis, Hds. Shoalwater Bay, rare, Cooper; mouth of Umpqua Bivers Vellum

River, Vollum.

385. Sanguinolaria Californiana, Conr. "Common at the mouth of the Columbia and other rivers, and high up salt-water creeks," Cooper. [= Macoma inconspicua, Brod. and Sby.]

86

88. Solen sicarius, Gld. One dead shell, near Steilacoom, Puget Sound, Cooper. "Probably abundant on the mud-flats near the mouth of the Nisqually

River," J. G. C.

Machæra patula, Portl. and Dix. (Coop. errata; Nuttalli in text), = Solen marimus, Wood, non Chemn.,= Solecurtus Nuttallii, Conr.,= Machæra costata, Midd., non Say. Washington Ter., Cooper. "Burrows a few inches from the surface, at the edge of the usual low tide; is justly considered (except the ovster) the best of the many fine estable molluscs of the coast. It is the only truly marine molluse found near the Columbia River; extends northwards wherever the beach is sandy, but not known in the Straits of J. G. C. de Fuca,

Mya cancellata, (Platyodon), Conr. Dead valves, St. Luis Obispo, Dr.

Antisell

Sphænia Californica, (Cryptomya), Conr. San Francisco, Trask.

386. Mytilimeria Nuttalli, Conr. A group, nestling in a white, friable, arenaceous

substance, was obtained at San Diego by Lieut. Trowbridge.

Pholas [Pholadidea] penita, Conr., = P. concamerata, Desh. From worn rock which drifted into Shoalwater Bay, attached to the roots of Macrocystis, the giant seaweed, Cooper; De Fuca, Suckley; mouth of Umpqua River, Oregon, Dr. Vollum.

The above list must be considered as a résumé, not merely of the shells of the N. P. Railroad Survey, but also of all those examined by Judge Cooper, from the Smithsonian Museum and from his own private collection. It is peculiarly valuable as preserving the notes concerning station, &c., of the original explorers, and has therefore required a more lengthened analysis.

The land-shells collected by Dr. Newberry in the Pacific Railroad Survey were described by W. G. Binney, Esq., with his accustomed accuracy. His paper will be found in the Reports, vol. vi. pp. 111-114. The following are the

only species enumerated:-

Helix fidelis, Gray, Chem., Pfr., Rve.,= H. Nuttalliana, Lea, Binney, sen., De Kay. Portland, Oregon, Newberry. Local.
 Helix infumata, Gld., Proc. Bost. N. H. S., Feb. 1855, p. 127. Hills near San Francisco, Newberry. Extremely rare.
 Helix æruginosa, Gld., var. β. loc. cit. North of San Francisco, Newberry.

Rare.

4. Helix Dupetithouarsi, jun., Desh., Chem., Pfr., Rve.,= H. Oregonensis, Lea, Pfr. San Francisco, Benicia, Cal.; Klamath Lake, Oregon; Newberry. "One of the commonest and most widely distributed species of the Pacific region."

102. The U.S. Government also sent out a "North-west Boundary Commission," in charge of Archibald Campbell, Esq. The natural-history arrangements were superintended by the Smithsonian Inst., and Dr. C. B. R. Kennerly was appointed naturalist to the Expedition. At his request, I undertook to prepare a Report of the Mollusca, to be published and illustrated in a form corresponding to the Pacific Railroad Reports; Dr. Alcock kindly undertaking to dissect the animals, and Mr. Busk to examine the Polyzoa. Dr. Kennerly died on his return from a three years' exploration; and the civil war has thus far delayed any further publication. The materials have, however, been thoroughly investigated. They consist principally of dredgings in Puget Sound. On reference to the maps published by the U.S. Coast Survey, it will be seen that this inland sea consists of a remarkable labyrinth of waters, fiord within fiord, and only indirectly connected with the currents of the Pacific Ocean. It might therefore be expected to furnish us with the species of quiet migration, and perhaps with those still living from a period of previous altered conditions. No doubt it will furnish new materials to reward the labours of many successsive naturalists. The pre-

maturely closed investigations of Pr. Kennerley are only the beginning of a rich harvest. Dr. George Suckley, late assistant-surgeon of the U.S. army, was appointed to complete the natural-history work, after his lamented death. A complete list of the species collected will be found in the fifth column of the Vancouver and Californian table, v. infrd, par. 112. The particulars of station, &c., and all the knowledge which the laborious explorer had collected, are lost to science. It is quite possible that some of the species here accredited to Puget Sound were obtained in neighbouring localities in the Straits of De Fuca. The specimens are in beautifully fresh condition, and of most of them the animals were preserved in alcohol. The following are the shells first brought from the Vancouver district by the American N. W. Boundary Commission, the diagnoses of new species being (according to custom) first published in the Proceedings of the Ac. Nat. Sc. Philadelphia.

- 1. Zirphæa crispata. Two living specimens of this very characteristic Atlantic sp.
- 2. Saxicava phoiadis. Several living specimens.
- Sphæhia ovoidea, n. s. One sp. living.
 Cryptomya Californica. Several living sp.

- 5. Thracia curta. One specimen.
 6. Mytilimeria Nuttullii. Three sp. living at base of test of Ascidian. [The animal appeared too peculiar to venture on a dissection. It has been entrusted to Dr. Alcock, of the Manchester Museum.]
- 7. Neæra pectinata, n. s. One sp. living.
- 8. Kennerlia filosa, n. s. and n. subg. Several living specimens.
- 9. Psammobia rubroradiata. One fresh specimen of uniform tint.
- 10. Macoma (Pv.) expansa. Adult broken; young living. Belongs to a group of forms classed together by some writers under lata or proxima, but the characters of the hinge and mantle-bend have not yet been sufficiently studied.
- 11. Macoma yoldiformis, n. s. One valve.
- 12. Angulus modestus, n. s., but closely allied to the eastern A. tener, Say. Two sp. living.
- 12b. Angulus (?modestus, var.) obtusus. Several fresh specimens.
- 13. Clementia subdiaphana, n. s. Very rare, living. Intermediate between Cle-
- mentia proper and the prora group of thin Callista.

 14. Psephis Lordi, Baird. Several living sp. from which the subg. was eliminated.

 15. Venus Kennerlyi, Rve. Very rare. One sp. living. Some of the shells called
- V. astartoides by Midd. may be the young of this.

 16. Petricola carditoides. Several fresh specimens.
- 17. Astarte (? var.) compacta. One sp. living; may hereafter be connected with A. compressa.
- 18. Serripes Granlandicus. Several young living specimens.
- 19. Lucina temusculpta, n. s. Two living specimens, of which one had the surface disintegrated.
- 20. Cryptodon serricatus, n. s. One living sp. 21. Kellia Laperousii. A few living specimens.
- 22. Kellia suborbicularis. A few living specimens.
- 23. Lasea rubra. One sp. living.
- 24. Pythina rugifera, n. s. Two living sp. Intermediate between Pythina and Kellia.

- Tellimya tumida, n. s. One sp. living.
 Modiolaria levigata. Two living sp.
 Modiolaria marmorata. One sp. living. (A shell in the U. S. F. E. Col., though marked "Fiji" in Dr. Gould's MS. list, probably came from Puget Sound, being thus confirmed.)
 28. Nucula tenuis. Two sp. living.
- 29. Acila castrensis. One sp. living.
- 30. Leda fossa, Baird. One normal sp. living.
 - These species were kindly determined by Mr. Hanley.

```
31. Leda minuta, Linn. One sp. living.
32. Yoldia lanceolata, J. Sby. Two sp. living.
33. Yoldia amygdala. One sp. living 5.
34. Haminea hydatis. Two sp. living.
35, 36. Two species of Tectibranchiates, not yet worked-out by Dr. Alcock.
37. Tornatina eximia, Baird. Abundant, living.
38. Cylichna (?var.) attonsa. One living sp. Probably a variety of cylindracea.
39. Dentalium rectius, n.s. Very rare, dead.
40. Acanthopicura scalra. One living sp.
41. Mopalia Grayii, n. s. One living sp.
42. Mopalia Hindri. One living sp.
 42. Mopalia Hindsii. One living sp
 43. Mopalia sinuata, n. s. Two sp. living. A well-marked group in the genus.

44. Monalia imporcata, n. s. Two sp. living. \( \)
45. Ischnochiton (Trachydermon) trifidus, n. s. One living sp. \( \)
46. Ischnochiton (Trachydermon) flectens, n. s. One living sp. \( \)
47. Ischnochiton (Trachydermon) retiporosus, n. s. One living sp. \( \)
48. Ischnochiton (Lepidopleurus) Mertensii. Rare, living. \( \)
49. Lepeta cæcqides, n. s. Three sp. living. \( \)
50. Calliostoma variegatum, n. s. One living sp. \( \)
51. Margarita? Vahlii. Three sp. living, = M. pusilla, Jeffr., teste A. Ad. \( \)
51b. Margarita (? v.) tenuisculpta. Perhaps a var. of Vahlii, but sculptured. Several living specimens

                 living specimens.

    Margarita lirulata, n. s. Several living specimens, forming a Darwinian group,
of which var. s. subelevata, var. β. obsoleta, and ?var. γ. conica might pass

 for species from single specimens.
53. Margarita inflata, n. s. Two sp. living.
  54. Me alia lacteola, Pn. s. Two sp. living, but eroded. May prove a var. of
 lactea, but with different sculpture.
54b. Mesalia (Placteola, var.) subplanata. Two sp. living, but eroded.
55. Lacuna vincta. One fresh specimen.

    Rissoa compacta, n. s. Not uncommon, living.
    Drillia incisa, n. s. Two fresh specimens.

 57. Drula utust, n. s. I we fresh specimens.
52. Drillin cancellata, n. s. One sdolescent specimen.
53. Mangelia levidensis, n. s. One fresh specimen.
63. Mangelia angulata†. One fresh specimen.
61. Bela excurvata, n. s. (Like Trevelyana.) One fresh specimen.
62. Chemnitzia (? v.) aurantia†. One fresh specimen.
63. Chemnitzia tridentata†. Two fresh specimens.
64. Chemnitzia tridentata†. Two fresh specimens.
65. Publing spicens n. s. One fresh specimens.
  65. Eulima micans, n. s. One fresh specimen.
  66. Velutina lævigata. Several fine living specimens.
 67. Ocinebra interfossa. Rare, dead.
68. Nitidella Gouldist. Two living specimens, proving the genus.
69. Trophon multicostatus. Two fresh specimens.
70. Chrysodomus !tabulatus, jun. One young sp.
71. Chrysodomus rectirostris, n. s. One living sp.
72, 73. Two species of Cephalopods, not yet affiliated.
```

Besides adding more than 70 marine species to the Vancouver branch of the Californian fauna, from specimens in good condition, without a single ballast or exotic admixture, the confirmation of many species, which before rested only on the uncertain testimony of the U. S. E. L. labels, and the affiliation of others which, on the same testimony, had been wrongly assigned to distant and erroneous localities, was no slight benefit to science. The land and freshwater species of the Expedition will be found tabulated, with others, in the separate lists; par. 115.

103. While the American naturalists were thus actively engaged in ex-

[†] These species were first found by Col. Jewett at Sta. Barbara. Vide p. 537.

ploring the regions south of the political boundary, similar explorations, on a less extensive scale, were being made under the direction of the British Government. The naturalist to the British North American Boundary Commission, during the years 1858-1862, was J. K. Lord, Esq., F.Z.S. He made a very valuable collection of shells in Vancouver Island and British Columbia, the first series of which was presented to the British Museum. The new species were described by W. Baird*, Esq., M.D., F.L.S., in a paper communicated to the Zool. Soc., and published in its 'Proceedings,' Feb. 10th, 1863, pp. 66-70.—Another series of shells, from the same district, was presented to the Brit. Mus. by the Lords of the Admiralty, collected by Dr. Lyall, of H. M. Ship 'Plumper.' Two new species from this collection were described by Dr. Baird, in a separate paper, P. Z. S., Feb. 10th, 1863, p. 71. The new species from Mr. Lord's collections have been drawn on stone by Sowerby. The figure-numbers here quoted correspond with the proof-copy kindly furnished by Dr. Baird.—A third series was collected by Dr. Forbes, R.N., in the same Expedition. After Mr. Cuming had made his own selections, this passed into the ordinary London market. It contained several species of peculiar interest. The following are the (supposed) new species of the Survey:-

P.Z.S. Plate L

Page: No. 1. Chrysodomus tabulatus, Baird. One broken specimen, Esquimalt Harb., Vancouver Island, Lord. [One perfect shell, Neeah Bay, Swan.]

 Vitularia aspera, Bd. Several living specimens, Esquimalt Harb., Vanc. Island, Lord. [Belongs to a group of grooved muricoid Purpurids, intermediate between Rhizocheilus and Cerostoma, for which the subgenus Ocinebra may be reconstituted. These shells are the rough form of Ocinebra lurida, Midd.]

67 3. Chemmitzia Vancouverensis, Bd. [= torquata, Gld.]. Esquimalt Harb., Vanc. Island, Lord. From the crop of a pintail Duck. artist has failed to represent the peculiar character of the species, which is, that the ribs end above the periphery, so that a smooth

belt appears round the spire above the sutures.]
4. Amnicola Hindsii, Bd. Seven sp., River Kootanie East; nine sp.,
Wigwam River, west slope of Rocky Mts., 4626 ft. high, Br. Col.,

- 5
- 68
- Vigwain Kiver, west slope of Nocky Mes., 4020 ft. high, fr. Col., Lord. Resembles Paludina [Fluminicola] seminalis, Hds.
 Bullina (Tornatina) eximia, Bd. Esquimalt Harb., V. I., Lord. Alive in 12 fm.; dead in Duck's stomach. [Not Bullina, Add. Gen.]
 Succinea Hawkinsii, Bd. Six sp. Lake Osoyoos, Brit. Col., Lord.
 Linnaa Sumassii †, Bd. Like L. elodes, Say. Plentiful. Sumass Prairie, Fraser R., Brit. Col., Lord. [Extremely like L. palustris.]
 Physa Lordi, Bd. Plentiful. Lake Osoyoos, British Columbia, Lord. 7
 - 8
- [Larger than Ph. humerosa, Gld., and with strong columellar fold.]
 9. Ancylus Kootaniensis, Bd. Six sp., River Kootanie East; five sp.,
 River Spokane, British Columbia, Lord. 69

and perplexing.

† These species are named after places, not after persons, as would be supposed by the terminations.

^{*} It is due to the memory of Dr. Kennerley, as well as to the other naturalists connected with the various American surveys, and the officers of the Smiths. Inst., who so generously entrusted to the writer their unique specimens for comparison with the London museums, to state, that (with two exceptions) the new marine species of the British Survey would have been published long before the appearance of Dr. Baird's paper, but for the derangement of the U.S. natural-history publications, consequent on the secession movement. Although the Smithsonian Inst. had offered to present to the Brit. Mus. their first series of duplicate specimens from these expeditions, which was exhibited at the Manchester Meeting of the Brit. Assoc., where this Report was called for, no notice was given to the writer of the valuable results of the British survey; and it was only through the private kindness of Drs. Sclater and Baird that he was prevented from adding to the list of synonyms, already, alas! so numerous

P.Z.S. Plate II.
Page. No. Fig.
69 10 10. Chione Lordi, Bd. From a Duck's stomach. Plentiful. Esquimalt Harb., V. I., Lord.

11. Spicerium (Cyclas) tumidum, Bd. Plentiful. Sumass Prairie, Fraser River, British Columbia, Lord.

12, 13. Spherium (Cyclas) Spokani†, Bd. Two sp., River Spokane; two young sp., Kootanie River, British Columbia, Lord. [Closely related to tumidum, but more delicate.]

14. Ly msia saricola, Bd. Holes in rocks in Esquimalt Harb., V. I., Lord. Japan, teste A. Ad. Closely resembles L. navicula, Ad. and Rve.
[Abundant, and very variable in outline, sometimes like Saxicava pholadis, sometimes like Mytilimeria. Neeah Bay, Swan.]

14. 15. Crussatella Esquimalti, Bd. One sp. Esquimalt Harb., V. I., Lord.
[A true Astarte, with external ligament, with one ant. lat. tooth in any walve and one nost let tooth in the opposite well developed.

one valve, and one post lat tooth in the opposite, well developed. This character was noticed by J. Sby. in constituting the genus, but becomes obsolete in the typical species. The same peculiarity of margin is seen in *Crassatella*. The external rugge are singularly of margin is seen in Crussuur.
irregular, and not always continuous.

10-15 fm.; one sp. Esquimalt Harb., V. I., Lyall.

71 15

Irregular, and not always continuous.]

Leda fossa, Bd. 10-15 fm.; one sp. Esquimalt Harb., V. I., Lyall.

[= L. foreata, Baird, MS., on tablet.]

Nucula Lyallii, Bd. 8-10 fm.; one sp. Esquimalt Harb., V. I., Lyall.

Resembles N. divaricata, Hds., N. castrensis, Hds., N. mirabilis,

Ad. and Rve., and especially N. Cobboldiae from the Crag. [In the
early stage, the sculpture has several angles, afterwards only one.

Both Dr. Kennerley's and Dr. Lyall's specimens appear to be= 71 16 Aci a castrensis, Hds.]

The Vancouver Collections having been deposited in separate drawers, except the series mounted for the table-cases, permission has been given (with the kind assistance of Dr. Baird) to examine them minutely, and prepare a revised list of the species. The marine shells will be found in the sixth column of the general Vancouver and Californian Table. The following require special mention.

17. "Teredo fimbriata," teste Jeffr.; out of block of wood from Nai-ni-mo Harb., V. I., Lord.

Teredo. Shelly tube of large sp. Esquimalt Harb., Lord.
18. Netastoma Darwinii. Esquimalt Harb., Lord. One adult but injured specimen. [For this singular Pholad, with duck-bill prolongations of the valves, a subgenus of Pholadidea is proposed, as its characters do not accord with

Jouanettia, under which it is placed in the Cumingian Collection.]

19. "Saxicava rugosa." Several typical specimens; Esquimalt Harb., Lord, taken out of interior of hard stone, into which they appear to have bored.

20. "Callista ? pannosa." Esquimalt Harb., Lord. One young sp. [= Saxidomus

squalidus, jun.]
21. "Tapes rigida." Esquimalt Harb., Lord, common. [An instructive series, some with very close and fine, others with distant, strong ribs. Some have ribs large and rounded, approaching the sculpture of Cardia. Some change suddenly from one form to another. = T. staminea, var. Petitii.]

22. "Cardium Californiense, Desh." 8-15 fm. Vancouver Is., Lyall. [=var.

blandsm. Tablet contains elso young sp. of C. corbis.]

23. "Cardita ventricosa, Gld." 8-15 fm. Vanc. Is., Lyall. [Not ventricose, exactly resembles the East Coast specimens of Ven. borealis dredged by Dr. Stimpson.

24. "Anodonta cognata, Gld." [= A. Oregonensis, Lea.] Lake Osoyoos, Br. Col.

Lord. Two sp. Also Freshwater Lake, Nootka Sound, Lyall.

Anodonta ? Oregonensis, jun. Freshwater Lake, Nootka, V. I., Lord; one sp.

25. Anodonta ! Nuttulliana. Freshwater Lake, Nootka, Vanc. Is., Lord; one sp. 26. Anodonta Wahlamutensis. Freshwater Lake, Nootka, Vanc. Is., L.rd; four sp,

26. Anodonta ? Wahlamatensis, jun. Sumass Prairie, Fraser River, Brit. Col., Lord; one specimen.

Anodonta angulata. Fort Colville, Columbia R., Lord; one specimen [irregular and much eroded. The hinge-line is waved and a false "tooth" produced, in consequence of which it has been named] "Alasmodon."
 "Pecten rubidus, Hds." Vanc. Is., Lyall. [Hinds's type in Br. Mus. appears the ordinary form, of which P. hastatus=hericeus is the highly sculptured var.

This shell, which is more allied to Islandicus, may stand as P. Hindsii.]
29. Hinnites giganteus. Island 3 miles above Cape Mudge, Lyall.
30. Ostrea lurida. Esquimalt Harb., Lord. Dredged-up by Indians in small hand-

nets with long handles, in 2-3 fm., on mud-flats.

31. "Placunanomia cepio, Gray." Esquimalt Harb., Lord. On island rock, between tide-marks. [= P. macroschisma, smooth, hollow form.]

32. "Chiton (Platysemus) Wossnessenskii, Midd., = C. Hindsii, Rve." Esquimalt

Harb., Lord. One very fine specimen. [Quite distinct from Mopalia Hindsii (Gray); differs but slightly from M. muscosa, Gld.]

33. "Chiton? lavigatus." Esquimalt Harb., Lord. One specimen. [=Ischno-

chiton flectens.]
34. "Chiton dentiens, Gld., ?= marginatus." Esquimalt Harb., Lord. Two specimens. [= Ischnochiton pseudodentiens. Not congeneric with the British Leptochiton cinereus = marginatus.]

35. Acmaa "mitella, Mka." Esquimalt Harb., Lord. [Probably A. pelta, juil.

Not sculptured, as is the tropical species.]

36. "Acmaa ?testudinalis, jun." Esquimalt Harb., Lord. One young sp. [with extremely close fine strise; colour in festoons of orange-brown pencilling on

white ground. Might stand well for A. testudinalis, but probably = A. patina, ver. pintadina.]

87. Margarita "costellata, Sby." Esquimalt Harb., Lord. [= M. pupilla, Gld.]
88. Crepidula lingulata, Gld. Esquimalt Harb., Lord. Three young sp. [Ape: smooth, imbedded, passing into the aculeata type. The species probably =

C. dorsata, Brod.]

89. "Melania silicula, Gld., ?=rudens, Rve." Attached to weeds and floating sticks in swift stream on prairie, at Nisqually, W. T., Lord. [=plicifera, small var.]

40. Priene Oregonensis. Port Neville, 6 fm., Lyall. [Very fine; but opercula

probably misplaced.]
41. "Nitidella" gausapata, Gld. Esquimalt Harb., Lord. [A beautiful series of highly painted specimens. Operculum Nassoid, not Purpuroid; therefore ranks under Amycla.]
42. "Vitularia lactuca." Vancouver's Island, Lyall. [A fine series of Purpurs

crispata and vars., among which is a lilac-tinted specimen.]
43. Purpura decemcostata, Vanc. Is., Lyall. [= canaliculata. Operc. as in Ocinebra herida.

44. "Fusus Orpheus" [Bd., not] Gld. Esquimalt Harb., Lord. Five sp., with crabs. [= Ocinebra interfessa, very fine.]
45. Trophon Orpheus, Gld. Esquimalt Harb., Lord. One fresh specimen.
46. Helix Townsendiana, very fine. Sumass Prairie, Fraser River, Lord.
46b. "Helix Townsendiana, small var." Fort Colville, Columbia R.; also summit of Rocky Mts., Lord.

47. Helix fidelis, typical, jun. and adult. Vanc. Is., Lord.
47b. Helix fidelis. Large but very pale var. Sumass Prairie, Fraser R., Lord.
48. "Helix Thouarsii, jun." Sumass Prairie, Fraser R., Lord.
49. "Helix labiata = Columbiana, var." Vancouver Is., Lord, [closely resembling] H. rufescens]

50. "Helix vellicata, Fbs." Sumass Prairie, Fraser R., Lord. [= Vancourerensis.]
51. Helix [like rotundata]. Fort Colville, Columbia R., Lord. Two specimens.
52. Zonites [like excavata]. Fort Colville, Columbia R., Lord. One specimen.
53. Zonites [like electrica]. Fort Colville, Columbia R., Lord. Seven specimens.
54. Papa, sp. ind. jun. Lake Osovoos, British Columbia, Lord. One specimen. Genus not found before, north of California.]

55. "Succinea rusticana, Gld." Sumass Prairie, Fraser R., Lord. [Scarcely to be

distinguished from the European S. putris.]
Planorbis corpulentus, Say." Lake Osoyoos; Syniakwateen; Marsh, Koo-56. " Planorbis corpulentus, Say." tanie East, Brit. Col., Lord.

57. Planorbis ? subcrenatus, var. Sumass Prairie, Brit. Col., Lord. 58. "Limnæa staynahis," typical, fine, and abundant. Lake Osoyoos, Fraser R., Lord.

59. Limnæa stagnalis, long narrow spire, mouth swollen, closely fenestrated.
 Marshy stream, Syniakwateen, Lord.
 56. "Limnæa? desidiosa, Say." Lake Osoyoos; three sp., Lord. [Exactly resembles a var. of the widely distributed L. cataracta, which was found in the control of the control of

profusion in the Madison Lakes, Wisc.]

60. "Limnaea ?desidiosa, Say." Syniakwateen, Brit. Col., Lord. One sp. [Very turrited, whirls swollen; epidermis finely striated. The same species occurs as "L. megasoma, Say." Lake Osovoos."]

61. "Physa heterostropha, Say." Sumass Prairie, Fraser R. A variety from Lake

Osoyoos, Lord.

62. Physa [probably young of Lordi, but with orange band inside labrum.] Kootanie R. East, Brit. Col., Lord. One sp.

Besides the shells preserved in the National Collection, the following species were also brought by the Expedition:-

63. Terebratula unquiculus, n. s. Vanc. Is., Forbes. One adult specimen, Mus. Cum. [Extremely interesting as being the only sculptured species known recent. The young shells from California were naturally affiliated to Terebratella caput-serpentis by Messrs. Reeve and Hanley; but the adult has the loop similarly incomplete.]

64. Rhynconella positacca. Vanc. Is., Forbes. One specimen, Mus. Cum.
65. Darina declivis, n. a. Vanc. Is., Forbes. One specimen. [The only other species of Darina is from the West Coast of S. America.]

66. Clementia subdiaphana. Vanc. Is., Forbes. One broken sp. 67. Saxidomus brevisiphonatus, n. s. This unique shell is marked "Vancouver Island" in Mr. Cuming's Collection, and is believed by him to have formed a part of Dr. Forbes's series. The shape resembles Callista, without lunule. The mantle-bend is remarkably small for the genus.

63. Melania, n. a., teste Cuming. Vanc. Is., Forbes. [Two specimens, with very fine spiral striss, sent to Philadelphia for identification.]

69. Mesalia lacteola. Vanc. Is., Forbes. One sp., Mus. Cum.

70. Pteropoda, several species, of which two are new, teste Cuming; but they may have been collected on the ways of the series.

have been collected on the voyage. Forbes.

The collections made on the British Survey are peculiarly valuable to the student in consequence of the great perfection of the specimens. They have generally been obtained alive, and are often the finest known of their kinds. The occurrence, however, of a specimen of the tropical Orthalicus zebra, marked "Vancouver's Island," in Mr. Lord's collection*, is a useful lesson. When such reliable data are thus found possessed of adventitious materials, it will not be regarded as a slight on the collections of the most careful naturalists when specimens are regarded as of doubtful geographical accuracy. In Dr. Lyall's collections there also occur specimens of the well-known Patella Magellanica and Trophon Magellanicus, duly marked "Vancouver's Island," though no doubt collected in the passage round Cape Horn. The naturalists of the American Expl. Expeditions generally travelled across the continent.

104. The latest exploration undertaken for State purposes is also for our present object by far the most important, both as relates to the number of

Mr. Lord writes, "The fact of my having found this shell, alive, on Vancouver Island is beyond question. How it got there I do not pretend to say; it was very possibly brought by some ship,"

Page.
118. Helix Breweri, Newc. Near Lake Taho; 8 sp. (Also 1 sp. from mountains in Northern California, Prof. Brewer.) Like H. arborea.

" Helix Duranti, Newc. Santa Barbara Isl. "Like Planorbis albus = hireutus,

Gld.

Dr. Newcomb also identified the following species in the State Collection:— 119. Helix arrosa, Gld. Common near mouth of S. Francisco Bay.

Heliz arrosa, Glo. Common near mouth of S. Francisco Day.

Heliz arrosa, yellow var. Santa Cruz, Rowell.

Heliz Californiensis, Lea, or ? Nickliniana, Lea; var., Cooper.

Heliz Carpenteri, Newc. Broken dead shell, head of S. Joaquin Valley, Gabb.

Heliz Columbiana, Lea. Near S. Francisco.

Heliz chersina, Say. Very large, near Lake Taho, Cooper.

Heliz Thouarsii, Desh. Pt. Cypress, Monterey, Cooper.

Heliz ezarata, Pfr. Mt. Diablo, Brewer; Santa Cruz, Rowell.

Heliz fileliz (Pray. Humboldt Bay and mountains, lat. 42°, Brewer. Black "

Helix fidelis, Gray. Humboldt Bay and mountains, lat. 42°, Brewer. Black

99

- Var., Frick.

 Helix infumata, Gld. Near Ballenas Bay, Rowell.

 Helix kellettii, Fba. S. Diego, Catalina Ial., fine var., Cooper.

 Helix loricata, Gld. Near Oakland, Newcomb.

 Helix Newberryana, Bin. Temescal Mountains, near Los Angeles, Brower.

 Helix Nickliniana, Lea. Common near S. Francisco Bay, Cooper.

 Helix sportella, Gld. Near S. Francisco Bay, Cooper.

 Helix Mormonum, Pfr. San Joaquin Valley, Gabb; north to Mt. Shasta, Brewer.
- Helix Traskii, Newc. Mountains near Santa Barbara, Brewer. May be = H.

Helix tudiculata, Bin. Near S. Diego and S. Pedro, Cooper.

Helix Vancouverensis, Lea. De Fuca, Gabb: perhaps extends south to Humboldt Bay.

Dr. Palmer sent a valuable consignment of shells collected by him between San Diego and S. Pedro to the Smithsonian Institution. Dr. Cooper obtained permission to send the first series of duplicates, duly numbered, for identification, to the Smithsonian Institution. This invaluable series was lost in the "Golden Gate." The gold was recovered, and much of it stolen; the far more precious shells remain, unnaturally located, in their native elementa puzzle, perhaps, to palæontologists in some coming age. Other series, though not so complete, have since been received in safety; and through the liberality of the Californian Survey and of the Smithsonian Institution, as well as through the energy and kindness of Dr. Cooper, they are already being distributed to the Cumingian Collection, the British Museum, the museums at Cambridge, Mass., Philadelphia, Albany, Montreal, &c., as well as to the collections of working naturalists. The stations being now discovered, it is to be hoped that in a few years Californian shells will cease to be objects of great rarity in this country. At the request of Dr. Cooper, in order that he might proceed with other departments of his labours, all the new species which have been seen in England have been described in conjunction with those from other sources. On those which are only known here by the beautiful drawings sent by the collector, it would be unsafe and premature to impose a name. The diagnoses are being published in the Proc. Cal. Ac. N. S., and should be accredited to the zealous zoologist of the Survey, rather than to the mere artist-in-words who endeavours to represent their forms to the reader. It will be understood that the lists now to be presented, though corrected to the date of going to press, are still incomplete; and that the information has been compiled from Dr. Cooper's letters received at different times, without opportunity for his revision. Should errors, however, have escaped detection, they will, no doubt, be corrected, and omissions supplied, in the forthcoming Reports of the Survey. The species either new to science, or now first found in the Californian branch of the fauna, are as follows:-

1. Defrancia intricata. S. Diego, on Phasianella compta, &c. Maz. Cat., no. 13. 2. Terebratula unguiculus. Monterey to S. Diego: young shells in 6-20 fm.;

not rare.

 Terebratella ? caurina. Catalina Is., 80 fm.; living; rare.
 Waldheimia Grayi. Catalina Is., 120 fm.
 Zirphæa crispata. Fragments from S. Diego appear (very unexpectedly) to belong to this northern species.

6. Corbula luteola, n.s. S. Pedro—S. Diego; common near shore.
7. Neara pectivata. Santa Barb., Cat. Is., 40-60 fm. (Puget Sd., Kennerley).
8. Kentoelia bicarinata, n.s. Cat. Is., 40-60 fm.; rare.
9. Entodesma inflata, Conr., = diaphana, Cpr. Near S. Diego; 1 valve (Palmer).

10. Plectodon scaber, n.g. and n.s. Cat. Is.; 2 similar valves, 40-60 fm.
11. Macoma inquinata. S. Francisco; rare.
12. Macoma yoldiformis. S. Diego. (Puget Sound, Kennerley.)

Macoma yoldiformis. S. Diego. (Puget Sound, Kennerley.)
 Macoma indentata, n.s. S. Diego.
 Angulus variegatus, n.s. Mont., Cat. Is., 20-60 fm.; rare. (Neeah Bay, Swan.)
 Arcopagia lamellata. S. Diego. = Maz. Cat., no. 58.
 Gedalia (Cooperella) scintillæformis, n. subg., n.s. S. Diego. Santa Barbara Ia.
 Semele rupium. Catalina Is.; not rare. (Also Galapagos.)
 Semele pulchra. S. Diego. (Also Cape St. Lucas, Acapulco.)
 Semele incongrua, n.s. Catalina Is., 40-60 fm.; common.
 Psephis salmonea, n.s. S. Diego, Cat. Is., 30-40 fm.; rare.
 Psephis Lordi. Cat. Is., 20-40 fm.; common. (Puget Sound, Kennerley.)
 Astarte fluctuata, n.s. Cat. Is.; 2 similar valves; 40 fm. (Very like the Cragfossil. A. omaria. jun.: but Dr. Cooper considers it a Crassatella.)

fossil, A. omaria, jun.; but Dr. Cooper considers it a Crassatella.)

23. Venericardia borealis. Cat. Is., 120 fm. The typical, flat New England form.

The small swollen var.,= V. ventricosa, Gld., is also found at Cat. Is., in

30-40 fm.

Miodon prolongatus. (Neeah Bay, Stoan.) Identified from tracing only.
 Trapezium. One extremely young sp. = Maz. Cat., no. 120 (not like T. Duperryi).
 Chama Ispinosa. S. Diego. (One young valve sent.)
 Cardium (Imodestum, var.) centifilosum. Cat. Is., 30-40 fm. [The differences between this and the Eastern Pacific shell are probably only varietal.]
 Hemicardium biangulatum. Cat. Is., living in 10-20 fm. (Also Acapulco, Panama)

Panama.)

Liocardium elatum.
 Diego; very large (Maz. Cat., no. 124).
 Lucina tenuisculpta.
 Diego, living in 4 fm. (Also Puget Sound, Kennerley.)
 Var., dead in 120 fm., Cat. Is. (approaching L. Mazatlanica, Maz. Cat., no. 144).

31. Lucina borealis. Cat. Island, 120 fm. "= L. acutelirata, Conr., foss. E. E." Exactly agrees with British examples.

Exactly agrees with British examples.]
32. Cryptodon flexuosus. Cat. Is., 120 fm. Ditto.
33. Kellia suborbicularis. S. Diego; Cat. Is., 30-40 fm. Ditto.
34. Kellia (var.) Chironii. S. Diego. (Also Neeah Bay, Swam.)
35. Lasea rubra. Cat. Is., shore (typical).
36. Lepton meroëum, n.s. S. Diego.
37. Tellimya tumida. S. Diego. (Also Puget Sound, Kennerley.)
38. Pristes oblongus, n.g., n.s. S. Diego.
39. Crenella decussata. Cat. Is., 10-40 fm.; not rare. (The ordinary British, not the New England form.) the New England form.)

40. Barbatia gradata. S. Diego; Mar. Cet., no. 194.
41. Azinea intermedia. Monterey—S. Diego, Cat. Is., 40-60 fm. [Scarcely differe from the South American shell. It is the A. Barbarensis, Conr., of Pac. R. R. fossils, teste Cooper.

42. Acila castrensis. Cat. Is., 40-60 fm. (Also Puget Sound, Kennerley.)
43. Leda cuneata, teste Hant. Mont.—S. Diego; Cat. Is., 10-60 fm. 44. Leda hamata, n.s. Santa Barbara; Cat. Is., 20-60 fm.; common.
45. Verticordia ornata, D'Orb. Santa Barbara; Cat. Is., 20-40 fm. [Exactly accords with the Japanese species, novemcostata, teste A. Adams.] Bryophila setosa. (Cape St. Lucas, Xantus.) Identified from tracing, no. 980.
 Lima orientalis (in Mus. Cum., = dehiscens, Conr., teste Cooper). Mont.—San Diego; Cat. Is., beach to 20 fm.; common. 43. Limatula subauriculata. 40-120 fm., Cat. Is.; not rare: 1 valve in 4 fm., San Diego. [Exactly agrees with British specimens. 49. Janira dentata. Monterey, S. Diego, beach to 20 fm. (Also Cape St. Lucas, Xantus.) 50. Cavolina telemus. Cat. Is.; dead in 30-60 fm. (Also Vancouver, Lyall.) 51. Tornatina carinata. S. Diego. (Also Mazatlan, Reigen.)
52. Pedipes kiratus. S. Diego. (Also Cape St. Lucas, Xantus.)
53. Dentalium (var.) Indianorum. Mont.—Cat. Is., 20 fm.; common. [Probably a striated var. of pretiosum, which Sowerby doubtfully, and Dr. Baird confidently, affiliate to D. entale.] 54. Dentalium semipolitum. S. Diego. (Also La Paz.)
55. Dentalium hexagonum. S. Diego. (Also W. Mexico.)
56. Acanthochites avicula, n.s. Cat. Is., 8-20 fm.; rare. 57. Acanthopleura fluxa, n.s. Cat. Is. 58. Ischnochiton veredentiens, n.s. Cat. Is., 10-20 fm. 59. Ischnochiton (Lepidopleurus) pectinatus, n.s. Cat. Is., beach. 60. Ischnochiton (Lepidopleurus) scabricostatus, n.s. Cat. Is., 8-20 fm.
61. Ischnochiton (Trachydermon) pseudodentiens. S. Diego. (Also Puget Sound, Kennerley.)

62. Ischnochiton (Trachydermon) gothicus, n.s. Cat. Is., 8-20 fm. 63. Leptochiton nexus, n.s. Cat. Is., 20-80 fm.

64. Nacella (Ppaleacea, var.) triangularis. Monterey

65. ? Nacella subspiralis. Cat. Is., 10-20 fm. [May be the young of the long-lost Patella calyptra, Mart.; unless that be a broken Crepidula adunca.]

66. Scurria (? var.) funiculata. Monterey; rare.
67. Puncturella cucullata. Monterey. (Also Puget Sound, U. S. E. E.)
63. Puncturella Cooperi, n.s. Cat. 1s., 30–120 fm.; not rare.

69. ? Imperator serratus, ??n.s. Monterey; Cat. Is., 10-20 fm. [Dr. Cooper thinks this shell probably the young of Pomaulax.]
70. ? Leptonyx bacula, n.s. Cat. Is., beach, dead.
71. Gibbula optabilis, n.s. S. Diego.

S. Diego. 72. Calliostoma supragranosum, n.s. S. Diego. 73. Calliostoma gemmulatum, n.s. S. Diego.

74. Calliostoma splendens, n.s. Mont.; Cat. Is., 6-40 fm.

75. Margarita (Pvar.) salmonea. Mont.; Cat. Is., 6-40 fm. [Intermediate between undulata and pupilla.]

76. Margarita acuticostata. Mont.; Cat. Is., 8-20 fm. [Fossil, Santa Barbara,

Solariella peramabilis, ?n.s. Cat. Is., 40-120 fm.; living. [Differs but slightly from S. aspecta, Japan, A. Ad.]

78. Ethalia supravallata, n.s., and Pvar. invallata. S. Diego. 79. Liotia fenestrata, n.s. Cat. Is., beach to 40 fm.; dead.

80. Liotia acuticostata, n.s. Mont.; Cat. Is., 10-20 fm. 81. Crepidula excavata, var. jun. Santa Barbara Island. 82. Galerus contortus, n.s. Mont.—S. Diego, 20-40 fm.

83. Hipponyx serratus. Santa Barbara Island; 1 sp. Maz. Cat., no. 346. 84. Cecum crebricinctum, n.s. Mont.—S. Diego; Cat. Is., 8-20 fm. 85. Cæcum Cooperi, n.s. S. Diego. [Two fine species of the [Two fine species of the Anellum

group.]

86. Turritella Cooperi, fn.s. S. Diego; Cat. Is.; common. [May prove identical with one of Conrad's imperfectly described fossils in P. R. E. E.]

87. Mesalia tenuisculpta, n.s. S. Diego; shoal water.

88. Bittium armillatum. S. Diego. [Fossil, Santa Barbara, Jewett.] 89. Bittium asperum. S. Diego; Cat. Is., beach to 40 fm. [Fossil, Sunta Barbara, Jewett. 90. Isapis fenestrata, n.s. S. Diego. (Also Neesh Bay, Swan.)
91. Isapis obtusa, n.s. Mont.—S. Diego; Cat. Is., 10-20 fm.
92. Rissoina interfossa, n.s. Mont.; Cat. Is., 8-10 fm.
93. Rissoa acufelirata, n.s. S. Diego.
94. Fenella pupoidea, n.s. Mont., 20 fm.; rare.
95. Amphilhalamus lacunatus, n.s. S. Diego. 1 immature specimum.
96. Diala acuta, n.s. Mont.; Cat. Is., beach to 10 fm.
97. Diala gaggragges n.s. Monteroxy S. Diego. years years 97. Diala marmorea, n.s. Monterey, S. Diego; very rare.
98. Styliferina turrita, n.s. S. Diego.
99. Jeffreysia translucens, n.s. S. Diego.
100. Cythna albida, n.s. S. Diego. 101. Trivia Solandri. Santa Barbara and St. Nicholas Is.; common. 102. Obeliscus Prariegatus. S. Diego. (Also La Paz, Cape St. Lucas.) 103. Chrysallida pumila, n.s. S. Diego; Cat. Is. 104. Chrysallida cincte, n.s. Sta. Barbara Is.; very rare. 105. Chemnitzia chocolata, n.s. S. Diego. 106. Chemnitzia (?tennicula, var.) subcuspidata. S. Diego. 107. Eulima micans, n.s. S. Diego. Cat. Is., 30-40 fm. (Also Puget Sound, Kennerley.) 108. Eulima compacta, Pn.s. S. Diego. | Dr. Cooper has not decided whether 109. Eulima ratila, Pn.s. Monterey. | these be distinct species. 110. Scalaria bellastriata, n.s. Monterey. 111. Scalaria subcoronata, n.s. Monterey.
112. Scalaria crebricostata, n.s. Monterey, S. Diego. 113. Scalaria ? Cumingii. S. Diego. 114. Scalaria ? Indianorum, var. S. Diego. [Probably conspecific with the Vancouver shells.]
115. Opalia borealis. Farallones Is. (Also Neeah Bay, Swan.) 110. Opalia spongiosa, n.s. Monterey.

117. Opalia retiporosa, n.s. Cat. Is., rare and dead in 40 fm.

118. Cerithiopsis columna, n.s. Monterey.

119. Cerithiopsis assimilata. Cat. Is. = Maz. Cat., no. 563.

120. Triforis Padversa. Cat. Is., 10-40 fm., very rare. [The specimens sent cannot be distinguished from the Herm shells.] 121. Priene Oregonensis. "Comes south to Monterey."
122. Nassa insculpta, n.s. Cat. Is., living in 40 fm., rare.
123. Amycla undata, n.s. Cat. Is., Diving in 40 fm. 124. Amycla chrysalloidea, n.s. S. Diego, shoel water. 125. Anachis subturrita, n.s. S. Diego. 128. Trophon triangulatus, ? n.s. Cat. Is., 60 fm. [Resembles the young of Murex centrifugus.]
127. Argonauta argo. "Hundreds on beach at Sta. Cruz Is." 128. Octopus punctatus, Gabb. San Clemente Is. 129. Onychoteuthis fusiformis, Gabb. San Clemente Is. 130. Ommastrephes giganteus, D'Orb. San Clemente Is. 131. Ommastrephes Ayresii, Gabb. San Clemente Is. "Hundreds on the beach."

Besides the above, several species are now satisfactorily assigned to the fauna, the evidence for which was before considered doubtful. Such are-

- 132. Waldheimia Californica, Koch [non suct.,=globosa, Patagonia]. 120 fm. Catalina Is.
- 133. Chidiophora punctata. S. Diego to Sta. Cruz; valves common, but rare living. 134, 135. Standella Californica, planulata, et ?nasuta. Conrad's types being lost, and his species imperfectly described from very young specimens, a difficulty
- * Most of the minute shells from S. Diego, quoted without station, were found in the shell-washings of the consignments from Dr. Cooper and Dr. Palmer.

No. attends their identification. Dr. Cooper found very large valves (resembling Schizotherus) in abundance, but much deformed by the entrance of sand, and apparently killed by the fresh waters of the great flood. The large shells belong to two very distinct species, which are probably those of Conrad; among the small shells is perhaps a third, which may be Dr. Gould's suppressed nasuta.

136. Raëta undulata. Taëta undulata. This remarkable reverse of the Atlantic R. canaliculata is also confirmed by rare valves from the S. Diegan district. It is not congeneric with Harvella elegans, to which it bears but a slight external resemblance.

137. Tapes tenerrima. Large dead valves of this very distinct species were found with the Standellæ, and confirm Col. Jewett's young shells described as from Panama.

 Peten psuciostatus. Sta. Barbara Is. [Described from Col. Jewett's valves.]
 Bulla Quoyii. S. Diego. Maz. Cat. no. 226.
 Truncatella Californica. S. Diego.
 Acmea rosacea. Monterey to S. Diego. This shell is named pileolas, Midd, in Mus. Cuming, but does not agree with the diagnosis. It can hardly be distinguished from Horm pregiones of A principle. distinguished from Herm specimens of A. virginea. It was first brought by

Col. Jewett, but referred to Panama.

142. Amphithalamus inclusus. S. Diego. [Several specimens of this minute but remarkable new genus confirm a solitary shell in Col. Jewett's mixed

collections.]

143. Myurella simplex. Very variable in sculpture, as befits the species which forms the northern limit of a group common between the tropics. Col. Jewett's shell was in poor condition, and supposed to be the young of a Gulf species.

144. Volvarina varia. S. Diego, Cat. Is. [Sta. Barbara, Jewett; also C. S. Lucas.]
145. Nassa Cooperi, Fbs. S. Diego, Cat. Is. [This Kellettian shell has a double right to its name, now that Dr. Cooper has ascertained its habitat.]

The information on station, &c., which Dr. Cooper has sent with regard to previously known species, will be found incorporated in the general table of the fauna. The following notes, extracted from his letters, are too valuable to be omitted:

Haliotis Caleforniensis. "This form is so rare that I think it only a var. of Cracherodii."

Raliotis. Several specimens from the Farallones present characters intermediate between corrugata, rufescens, and Kamtschatkana. It is not yet ascertained whether they are hybrids or a distinct species.

"Livona picoides I have not found, though I have seen fresh ones from Pt.

Conception."

*? Serpulorbis equamigerus. Common south of Pt. Conception; has no operculum." [The young begins like V. anellum, Mörch.]

Macron lividus. Point Loma, S. Pedro, common; extends northwards to the Farallones. [= Planaxis nigritella, Newcomb, MS.; non auct.]

"Olivella semistriata, Gray, fide Newc., is a species found N. of Monterey only."

[As Dr. Gray's species is from Panama, that of Newcomb is probably O batica.]

"Nassa interstriata, Conr., foss. (?= N. paupera, Gld.); resembles N. fossata, Gld. (= B. elegans, Rve.*), but distinct. Common south from Sta. Barbara." [Probably = N. perpinguis, Hds. N. paupera is quite distinct, = N. striata, C. B. Ad., teste Cuming.]

"Fissurella violacea I have seen from Catalina Is." [Esch.'s shell is generally considered S. American. ? May Dr. Cooper's be a form of volcano.]

Acmee. With regard to limpets and other variable shells, Dr. C. writes:-"From my examination of large numbers of specimens, I am more and more compelled to believe that hybrids are very frequent between allied

Nassa elegans was first published, by J. Sowerby, in the Min. Conch. 1824.

species, and that the comparatively few links that are met-with in large series of two forms should not be allowed to unite them, but be considered as hybrids."

Lunatia Levisii. Abundant on beach. [One sp. measures 53 in., and the animal of a much smaller one (4 in.) is 11 inches long.]
Ostrea. "The same species throughout to S. Franc.: S. Diego," Cooper. [Be-

sides the typical northern shell, O. lurida, are well-marked Pvars. laticauduta, rufoides, and expansa.]

There are also several species which are quoted in Dr. Cooper's letters, or sppear from his sketches to be quite distinct, or at least new to the fauna; but they have not yet been sent for identification. Among these the following are the most important. The MS. numbers refer to the tracings which Dr. Cooper kindly copied from his original drawings. Where a "-" appears, the information is derived from his letters only.

MS. No. 402. Allied to ? Thracia.

Cyathodonta, probably plicata, Desh. (Cape St. Lucas, Xantus).
 620a. Figure accords exactly with Venus toreuma, Gld. Catalina Is., beach.

1058. Figure accords with Lioconcha hieroglyphica. Catalina Is., 120 fm.
1000. Resembles Sunapta. Catalina Is., 40 fm.
676. Resembles Crassa:ella Pacifica.

874. Lucina.

983. Nucula, with concentric sculpture. Sta. Barbara, 15 fm.

Yoldia. One fresh valve of a large and remarkable species, 26 by 12 in., with fine concentric sculpture, very inequilateral. Sta. Cruz; on beach. 751a. ? Ianthina.

 1077, 1078. Chitonida. Two highly sculptured species. Sta. Barbara, 12 fm.
 — ? Gadinia. Cat. Is., Cooper; Farallone, Is., Rowell. "The animal differs in having pectinated flattened tentacles. It may be the type of a new genus Rowellia."

466. Emarginula. [The first appearance of the genus on the W. American coast.]

415a. Glyphis.

354a. Like Haplocochleas. Sta. Barbara, 15 fm.

 564. Like Pyrgola. 40 fm.
 Trivia sanguinea. Dredged dead in Cat. Is.
 Trivia. "Thinner and larger than sanguinea. Common in Lower Cal." [? see Pacifica.]

"Terebra specillata." One sp. near S. Pedro.

Pleurotomidæ. Several species are represented only by single specimens. Among them are

588. Drillia.

1021. Drillia, 2 in. long, shaped like Mitra. One worn sp. Catalina Is., 120 fm. 1020. Drillia, reversed. Catalina Is., 60 fm., living.

479a. Clathurella (large). Sta. Barb., 20 fm.

663. Clathurella, 15 fm., Sta. Barb.

1852. ? Clathurella, 40 fm.

1053. P. Daphnella, 60 fm.

419, 426. Two species of shells recembling Daphnella.

1055. ?Bela, 80 fm.

423a. Mangelia, 15 fm., Sta. Barb.

397b. Shape of Cithara, without ribs. Catalina Is., beach. 1028. "?Aclis," reversed. One sp., Cat. Is., 120 fm. [The figure more resembles a young Vermetid.]

463. "Cancellaria? Tritonia, Sby. Agrees with Dr. Newcom Diego, one dead on beach, 21 in. long.

817. Concellaria. Fragment of a second species equally large. Agrees with Dr. Newcomb's specimen." S.

1038. Sigaretus. 40 fm., dead, Cat. Is. 1050. Lamellaria. 10 fm., Sta. Barbara.

(385a, 464, 818.) Naticida. 3 sp.

010	ALFORI—1000.
MS. No. 576. Possib cata 1001. Figure — "Nass — ?Macr — Chryse — Fusus, 411. Troph 515b. Muric &c., traci 515d. ? Typi 520. Perono 384b. Muric	ly a scaly var. of Monoceros engonatum; like the Purpura, var. imbri- , of Europe, but of different colour and texture; ?= spiratum, Blainv. resembles Vexilla fuscolineata, Pse. Sandwich Is. a, smooth, with thick lip." Cat. Is., 30 fm. [Comp. insculpta.] on Kellettii. Cat. Is., dead, in 60 fm. domus ?tabulatus. Cat. Is., 120 fm., young, dead. "like geniculus, Conr." Farallones Is. on, like multicostatus. cidea. Cat. Is., 40 fm. [The young shells called Trophon, Typhis, by Dr. Cooper can scarcely be identified without a series, and from ings only.] his. Sta. Barb., 15 fm. ordus centrifugus, jun. S. Pedro; rare on beach. cidea, like alveata. Mont.—S. Diego. malia. Monterey, Sta. Barb., beach.
In Prof. W May 4th, 18 cological lab No. of st	Whitney's Preliminary Report on the Survey, Proc. Cal. Ac. p. 27, 363, he states approximately as the result of Dr. Cooper's malacurs, up to the close of 1862:— Decies in the collection
Of which Other su In a Surv	h are new to California, and believed to be undescribed 123 pposed Californian species not yet collected 65 rey conducted with such care, even negative evidence is of some though not conclusive. Dr. Cooper has not been able to obtain
Discina Strigilla Venus di Trapezie Lucina d Modiola Mytilus crowd Barbatia Arca me	Evansii. carnaria. [Mr. Nuttall's specimens were probably Atlantic.] ispar. im Californicum. [=Duperryi,=Guiniacum.] bella. [Perhaps = pectinata, Čpr.; but the type seems lost.] nitens. [Probably an error in the Cumingian label.] glomeratus, "=edulis, var." [Perhaps an accidental var. from being ed on a floating stick.] is pernoides. [Very probably an error in Dr. Gould's label.] uticostata. "Must have been brought to S. Diego."
" Cal. Coope descril <i>Radius 1</i> <i>Polinices</i>	marpusatus. [Ascribed to the fauna from abundant valves marked "in the U.S.E. E. collections, but certainly from S. America. Dr. or has unfortunately not been able to discover any of the species bed by Hds.] pariabilis. "Doubtless exotic." perspicua. "Probably Mexican." triquetra. "Probably Mexican." [Guaymas.]

105. Having now presented to the student an analysis of all that is yet known of the results of public surveys, it remains that we tabulate what has been accomplished by private enterprise. Mr. J. Xantus, a Hungarian gentleman in the employ of the United States Coast Survey under the able direction of Professor Bache, was stationed for eighteen months, ending July 1861, at Cape St. Lucas, the southern point of the peninsula of California. It is a source of great benefit to natural science that the Secretary of the Smithsonian Institution is also one of the acting members of the Coast Survey Board; and that a harmony of operations has always existed between the directors of these two scientific agencies in Washington. The publications of the Coast Survey have earned for themselves a reputation not surpassed by those of the oldest and wealthiest maritime nations. For obtaining data on geographical distribution, Cape St. Lucas was a peculiarly valuable station, being situated near the supposed meeting-point of the two faunas (v. B.A.

Rep.p.350); and also, not being a place of trade, or even an inhabited district, likely to be free from human importations, although we should be prepared to find dead exotics thrown on its shores both by northern and by tropical currents. In his solitary and what would otherwise have been monotonous life, Mr. Xantus found full employment in assiduously collecting specimens in all available departments of natural history; having received ample inetructions, and the needful apparatus, from the Smithsonian Institution. The bulk of the shells at first received from him were worn beach specimens; but afterwards several species were preserved, with the animals, in alcohol. Mr. Xantus generously presented the first series of the molluscs to the Smithsonian Museum, reserving the second for his native land. The first svailable duplicates of the shells not occurring in the Reigen collection will be found in the British Museum or in the Cumingian cabinets. Although the whole series would have found little favour in the eyes of a London dealer or a drawing-room collector, it proved a very interesting commentary on the Reigen and Adams Catalogues: it added about sixty new forms to the accurately located species of the marine fauna, besides confirming many others. which rested previously on doubtful evidence; and disproved the intermixture of northern species, which, from the map alone, had before been considered probable.

The collection is not only essentially tropical, but contains a larger proportion of Central American and Panama species than are found in the Reigen Catalogue. This may partly be due to the accidents of station, and partly to this projecting southern peninsula striking the equatorial currents. It must also be remembered that the Reigen Catalogue embraces only the Liverpool division of his collection; and that many more species may have existed in that portion of the Havre series which did not find its way to the London markets. Mr. Xantus also obtained individuals of identical species from Margarita Island, and a series containing living specimens of Purpura planospira (only thrown up dead on the promontory), from Socorro Island, one of the Revilla-gigedo group. A very few specimens of Haliotis and of Pacific shells may have been given to him by sailors or residents: they were not distinguished from his own series in opening the packages. The collection is not yet complete. In consequence of the French occupation of Mexico, it was with difficulty that Mr. Xantus himself "ran the blockade" at Manzanello; and he was compelled to leave there thirty-one boxes of shells, alcoholics, &c., subject to the risks of war.

The Polyzoa were placed in the hands of Mr. G. Busk for examination, and the alcoholics were intrusted to Dr. Alcock, the Curator of the Manchester Natural History Society. Neither of these gentlemen have as yet been

^{*} During the period that Mr. Xantus was out of employment, owing to the derangements of the war, a portion of the duplicates were offered for sale, and will be found in some of the principal collections.

able to report concerning them. The first notice of the shells appears in the Proc. Ac. Nat. Sc. Philadelphia, Dec. 1859, pp. 331, 332. The new species are described in the 'Annals and Magazine of Nat. Hist.,' 1864, vols. xiii. and xiv., as follows :-

```
A. N. H. Vol. XIII.
```

Sp. Page. 1. 311. Asthenothærus villosior, n.g. 1 living sp. and fragm.

2. Solemya valvulus. 1 living sp. ,,

3. Tellina (Peronæoderma) ochracea.

l sp. Valves. 312. 4.

- Peanmobia (? Amphichena) regularis. Valves.

 Callista pollicaris. 1 sp., living (= C. prora, var., teste Rve., C. I. f. 45).

 Callista !? pannosa, var.) puella. Extremely abundant, living. Also Acapulco, Jevett. (Very variable, yet always differing from the 5. typical South American shells.)
- Liocardium apicinum. Extremely abundant, living. Also La Paz; Aca-**313.** pulco, Jewett.

Lucina lingualis. Extremely abundant, valves.

- ? Crenella inflata. Valves; very rare. (An aberrant form.) Also Panama, 9. C. B. Ad.
- Bryophila setosa, n.g. Abundant; living planospira. Also California, Cooper. 10. 314. Abundant; living among sea-weed, on Purpura
- PAtus casta. Rare: allied to Cylichna. 11. "

12. Ischnochiton parallelus. Rare; living "

- 13. Ischnochiton (Pvar.) prasinatus. 1 living sp. Possibly a form of paral-,,
- 14. 315.

15.

- Ischnochiton serratus. 1 living sp., like Elenensis.

 Nacella peltoides, = Nacella, sp. ind., Maz. Cat., no. 262.

 Acmæa (?var.) atrata. Intermediate between P. discors, Phil., and P. 16. " floccata, Rve. Also La Paz, Margarita Bay.
- Acmæa strigillata. Intermediate in characters and station between A. patina and A. mesoleuca. Also Margarita Bay. 17. "

18. 475. Glyphis saturnalis. Not uncommon; living.

- Eucosmia variegata. (Probably a subgenus of Phasianella.) Rare, dead. " 20. Eucosmia (?variegata, var.) substriata. Very rare.
- 19.
- 21. Eucosmia punctata. 1 sp.

476. 22. Eucosmia cyclostoma. I sp.

23. Haplocochlias cyclophoreus, n. g. (?Related to Ethalia.) Very rare, dead. 24.

Narica aperta. 1 sp. "

25. Fossarus parcipictus. 3 sp.

477. 24; Fossarus purus. 1 sp.

- 27. Litorina pullata, = Litorina, sp. ind., Maz. Cat., no. 399. Abundant. ,, Litorina (Philippii, var.) penicillata. Like the W. Indian L. (ziczac, var.) 28.
 - lineata. Abundant.
- Rissoa albolirata. 1 sp. 20. 30. Fenella crystallina. 1 sp
- **4**78. 31. P Hydrobia compacta. May be a Barlesia. 1 sp.

Hyala rotundata. 1 sp. ? Diala electrina. 1 sp. 32.

- **33**. " 34. Acirsa [teste A. Ad.] menesthoides. 1 sp. "
- **35.** Imbedded in a star-fish, like Stylina. 1 living sp. Cythna asteriaphila.

36. Bittium nitens. 1 sp. . Vol. XIV.

87.

- 46 oð.
- 39).
- ΨÙ. Obeliscus variegatus. 2 worn sp. Described from a fresh Guaymas shell, Mus. Cal. Ac.
- (Odostomia) Evalea æquisculpta. 1 sp.
- **"**7. 42. (Odostomia) Evalea delicatula. 1 sp.
- 43. Chrysallida angusta. 1 sp.

A. N. H. Vol. XIV.

Sp. Page 44. 47. **4**7.

Eulima fuscostrigata. 1 sp.

Opalia crenatoides. 1 perfect and a few rubbed specimens. This, and the Santa Barbara fossil, O. Pvar. insculpta, are so close to the Por-45. tuguese O. crenata, that additional specimens may connect them.

46. Truncaria eurytoides. Common; rubbed. Also Guacomayo, in the Smithsonian Museum.

47. Sistrum (?ochrostoma, var.) rufonotatum; connected with type by a few 48. intermediate specimens. Rare; dead. 48.

? Nitidella mille punctata. Also Guacomayo, Mus. Smiths. Very rare, dead. Nitidella densilineata. Very rare; dead. " 49.

PAnachis tincta. 1 sp. 50.

49. 51. Anachis fuscostrigata, 1 sp.

Pisania elata. A few worn specimens; like Peristernia, without plait.

The following table contains the species previously described, with the addition of the other localities in which they are known to occur. The numbers in the first column are those in Prof. C. B. Adams's Panama Catalogue: a P in the same column signifies that the species has been found at Panama by other collectors. The second column contains the shells of La Paz, collected by Major Rich and others, and are marked by an italic P. In the third column, A shows that the shell has been found at Acapulco, on good authority; and C, that it is known at other stations on the Central American coast. The fourth column exhibits the corresponding numbers of the species in the B. M. Reigen Catalogue; and G shows that the shell has been found in the Gulf district by other collectors. In the fifth column, Cal. stands for Upper, and L for Lower California; Marg. for Margarita Bay, Gal. for the Galapagos, E for Ecuador and the tropical shores of S. America, and WI for the West Indies. The sixth column continues the numbering of the species from the list in the 'Annals.'

Pan. Cat.	La Paz.	Aca- pul.	Maz. Cat.	Other habitats.	No.	List of Cape St. Lucas Shells.
517		A	14	E	53	Discina Cumingii. On Margaritiphora.
P	1	١. ١	22	E	54	Gastrochæna ovata. In Spondylus.
	ļ.	A	23	Marg.	55	Saricava pholadis. In Spondylus.
					56	Eucharis, sp. ind. 1 dead valve, resembling W. Indian species.
P	ŀ	i 1	35		57	
	i	1	35 G	l i	58	
	P			L	59	Thracia (Cyathodonta) plicata ("? = truncatu, Migh."). 1 sp., jun.
P	1	1 1	G		60	Lyonsia inflata. 1 sp.
-	l		36	E	61	Lyonsia picta. 1 valve.
463	P	l c l	36 55	-	62	
469	-	Ă		E	63	
472	Į.		'	i - I	64	
	1	A	67		65	
P	ſ		٠.	l í	66	Lutricola viridotineta. 2 valves.
485		1 1	41		67	
			Ğ	Marg.	68	
l	l		40	I,	69	
48)	1	$ \mathbf{A} $	43	L E	70	
473		Ā	20	ΨÏ	71	

52C						BEPORT—1863.
Pan. Cat.	La Paz	Ace- pul.	Maz. Cat.	Other habitata.	No.	List of Cape St. Lucas Shells.
_		_	751	(Mar)	72	Donar, var. cælatus. Valves.
		A	76	(Mar.)	78	Donax? Conradi, jun.
450		C	77	L	74	Donax Pnavicula, jun.
456	n	_	80	"	75	
193	P	C		wı		
	P		79	l I	76	adult valves.
446	P	C	83	E	77 78	 Trigona radiata, jun. Trigona nitidula, Sby. Several living sp. agree exactly with Sby.'s figure. [Perhaps Lam.'s Mediterranean shell is different.]
448		C	90	E	79	Dosinia Dunkeri. Rare.
	P		88	E.Mar.	80	Dosinia ponderosa. Several pairs [jun. = distans].
444	-	A	92		81	Callista aurantia.
447	P	Ā	93	E.Mar.	82	Callista chionæa.
	-	Ĉ	96	Marg.	83	Callista vulnerata. Living, and dead valves.
			98	E	84	Callista (?var.) alternata. 1 living.
			۳ ا	l L	85	Amiantis callosa. Rare, living [= C. nobilis, Rve.].
	P		G	L.Mar.	86	Chione succincta. Very rare.
	P	C	١ ٠	E	87	Chione pulicaria, var. lilacina. Valves, abundant.
	P	A	t	Ē	88	Chione neglecta. Living and valves.
	1	^	106		888	Chione undatella + var. bilineata, Rve. (pars). Very
405	-	اما	110	100	89	rare. [Probably=neglecta, var.] Anomalocardia subimbricata. Valves.
435	P	C	113	E		
_	1	١.	111	103	90	Tapes squamosa. 1 sp.
P	1	A	24	E	91	Petricola robusta. In Spondylus.
	1	1	27		92	Rupellaria linguafelis.
	1	_	117	E	93	Crassatella varians. Living. Large and abundant.
492	İ	C	l	E	94	Crassatella gibbosa. Valves.
	P	١.	118		95	Lazaria Californica. Very rare.
	İ	C			96	Venericardia crassa. 1 valve.
405	1	C	121		97	Chama Buddiana, jun. On syenitic rock.
407	1	A	121	E	98	Chama echinata, Brod. Living, from Socorro Is.
\mathbf{P}		C	121	Marg.	986	
	ı	l	123		99	Chama lexogyra. Worn valves.
	P	A	122		100	Chama spinosa. 1 sp.
	P	A	ł	E	101	Cardium consors. Valves. (Very fine at Acapulco.)
433	1	C	125	E.Mar.	102	Cardium procerum. Valves.
434	1	١	126		103	Cardium senticosum. Valves.
P	P	A	1	L	104	Hemicardium biangulatum. Valves.
-	P	Ĉ	136	WI	105	Codakia tigerrina. Living, very large, and young valves. [Of the Pacific Is. type.]
P	1	1	137	Pac. Is.	106	Codakia ?punctata, jun.
P	P	A	147		107	Lucina eburnea. Living, rare.
P	1	A	140		108	Lucina excavata. 1 valve.
-	1	1	145	1	109	Lucina prolongata. Valves.
	1	1	143		110	Lucina cancellaris. Valve.
		1	G	1	iii	Diplodonta subquadrata. 1 sp.
	1	O	1 4	1	112	Diplodonta calculus. Several living sp.
					113	Mitha Childreni. [A few fresh specimens correct the habitat "Brazil," previously assigned to this
l	1	1	1	1		extremely rare and remarkable shell, which ap-
l	1	1	1	1		
<u>۱</u> ۳		١.	1,50	. [1114	pears to be a gigantic Felania.
P	1	A			114	
۱ ـ	1	A	154		115	
P	1_	C	1		1116	Mytilus palliopunctatus. Fragment.
P	P	' A			1117	Mytilus multiformis. Abundant.
P	1	1	169)	118	Septifer Cumingianus. Common.

Pan. Cat	La Par	Aca- pul.	Maz.	Other hab tats.	No.	List of Cape St. Lucas Shells.
	P	A	170	L.Mar.	119	Modiola capax. A few living sp. "Gal." [?].
	-	A	172	Gal.		Crenella coarctata. In Spondylus.
P	1	A	176	C.a.		
P	1	A	175		100	Lithophagus aristatus. In Spondylus.
I	7 0					Lithophagus plumula. In Spondylus.
-	P	Č	181	T-3		Arca multicostata. Adult valves, and jun. living.
P		C	189	E		Byssoarca Pacifica. Rare.
418	l _	A	130	E		Byssoarca mutabilis. Valve.
420	P			E	126	Barbatia Reeviana. Valves.
	l		192	l i	127	Barbatia vespertilio. Valves.
424	1	C	193]	128	Barbatia illota. Valve.
423	P		195	E	129	Barbatia solida. Rare.
416	_	A	194			Barbatia gradata. Valve.
110	P		G			Axinæa gigantea. Large valves, and jun. living.
	1		698	,		
	l	1		1		Axinaa, sp. ind.
~~~			201	E		Pinna lanceolata. Fragment.
395	۱ _	١. ا	200			Pinna maura. 1 sp., jun.
P	P	A	202			Pinna rugosa. 1 sp., jun.
391	P	C	204	'	136	Margaritiphora fimbriata. Living.
	i	ì		E	137	Avicula Peruviana. Valves.
393	P	A	205		138	Isognomon Chemnitzianus. Common, living.
	-		2)6			Isognomon Janus. 4 sp. living. One has close
	ı	1	= 00		100	ligament-pits, passing into costellatus, just as no.
	1		1		i	198 was masses into inside 1
	ا ۔	١.	۱ ۵	-		138, var. passes into incisus.]
	P	A	G	E	140	Pecten subnodosus. Several valves, and I living.
	l .	ł				[P. intermedia is only a var. of this species.]
<b>3</b> 87	P	A	207	E.Mar.	141	Pecten ventricosus. Valves. [The young is P.
		Ì	1	1	l	circularis, Sby., pars.]
	P		G	l	142	circularis, Sby., pars.] Janira dentata. Very plentiful.
	P			1		Lima tetrica. 1 living, and valves [= L. equamosa,
	ļ —	1	ĺ	i		teste Cuming. W. I., Mediter., Pac. Is.].
390	I	ĺ		Gal.	144	Lima arcuata. 1 fresh pair. [Can hardly be separa-
900	1	1	1	Uai.	122	And from I form in Col. Dee Is in Mus Com.
005	1		000	1	345	ted from L. fragilis, Gal., Pac. Is., in Mus. Cum.]
385	ı	ļ	208	i	140	Spondylus caloifer. Valves. Red var., and speci-
	ì	İ.		1	1	men changing into purple.  Picatula penicillata. 1 sp. on Fasciolaria.
366	1	C	210	l		Plicatula penicillata. 1 sp. on Fasciolaria.
381	1	A	211	l	147	Ostrea iridescens. A few living.
383	P	1	212	Marg.	148	Ostrea ? Virginica, jun.
	1	1	213	E		Ostrea Columbiensis. Valves.
384	P	1	215	Marg.		Ostrea amara. On Pomaulax.
- W-3	1	1	~10			
	ļ	ļ .	Į.	Cal.	101	Cavolina ?telemus. Fragment. (Pelagic.)
	(	!	!	1	152-	
	l _			l _	156	
321	P	A	224	E		Bulla Adamsi, and var. Common.
	ı	I	225	L	158	Bulla nebulosa. Rare.
	l	A	226	L.Gal.		Bulla Quoyi. Very rare.
l	1			L		Haminea vesicula. Plentiful, living.
	Į	!	229	PL		
l	Ì	1	0 شند	1	101	Haminea cymbiformis. 1 sp. [Closely related to
!	l	1	040	15	100	H. virescens.
_	1	١.	240	Marg.		Siphonaria aquilirata. Dead. [ful.
P	1	A	239		163	Siphonaria lecanium, with var. palmata, &c. Plenti-
	!	1	1		104	Onchidium Carpenteri. Very rare.
1	l	Į.	235	L.Cal.		Melampus olivaceus. Rare.
	1	1				[The rest of the Pulmonates will be tabulated
1	1	1	1		172	
į	l	1	243			Touthing decollate Vary wars
	1	1	243	-		Inthina decollata. Very rare.
		1	ı	L	11/4	Ischnochiton Magdalensis. Large and highly sculp-
,	1	1	i			tured. Very rare.

			,			
Pan. Cat.	Ia Par	Aca- pul.	Maz. Cat.	Other habitata	No	List of Capè St. Lucas Shells.
	1	C	252	E	175	Ischnochiton limaciformis. 2 specimens.
	(		256		176	Ischnockiton Beanii. 1 sp.
	1	1	258	ĺ	177	Acanthochites arragonites. A few living sp.
	l	C	261	l	178	Patella discors. Dead.
		Ā	260		179	Patella pediculus. Dead.
	1		264	Marg.	180	Acmea fascicularis. Abundant, living.
			268		181	Acmaa mitella, jun.
	P	A	273	Gal.	182	Fisserella rugosa, jun. A var. is first black, with
	1					two white rays: afterwards changes to whitish.
357		C			188	Fissurella microtrema. Common. [Passes into rugosa.]
	1		274	]	184	Fissurella nigrocincta. 1 young sp.
	P	A	279	E	185	Glyphis inequalis. Rare.
			281		188	Rimula Mazatlanica, 2 sp.
	l			L. Cal.		Haliotis Cracherodii. (Turtle Bay.)
	1			L. Cal.		Habiotis splendens. (Margarita Island, with 4,5,
						and 6 holes.)
				L	189	Callopoma Fokkesii, Dead.
				L. Cal.	100	Pomaulax undosus. Fresh, with Gulf Polyzon.
	P	C	286		191	Uvanilla olivacea. Dead.
		A	288		192	Uvanilla unquis. Dead.
		- 1	289	Marg.	193	Calliostoma eximium, Dead.
274	P			٠,	194	Omphalius coronulatus. Dead; not uncommon.
263		ı	295		195	Vitrinella Panamensis. 1 sp. off Spondylus.
304	P	A	326	Marg.	198	Nerita scabricosta. Abundant.
305	P	C	327		197	Nerita Bernhardi. Abundant.
336	P	A	343	E.Mar.	198	Crucibulum imbricatum. Dead.
337	P	A	344		199	Crucibulum spinosum. Dead.
344	P	A	334	E. Cal.	200	Crepidula aculeata. Dead. West and East Indies.
	P	A		E.Mar.	201	Crepidula ? arenata, jun. •
345	_	A		C.Mar.	202	Crepidula excavata, jun. et var.
346	P	. 1		E.Mar.	203	Crepidula onyx. Dead.
328	P	A	347	E	204	Hipponyx antiquatus. Dead.
327	ایرا	Ă.	349		205	Hipponyx barbatus. Pacific Is. Fresh sp.
329	P	٨	350	Gal.	208	Hipponyx Grayanus, Rare.
323	P	A	352		207	Aletes centiquadrus. On Margaritiphora, &c.
		. 1	355		208	Bivonia contorta. Frequent, on shells.
	اہرا	<b>A</b>	359	🚚	209	Petaloconchus macrophragma. Frequent, on shells
	P			L	210	Spiroglyphus lituella. On Purpura planospira and muricata, from Socorro Is.
į	_	. 1	367		211	Cæcum subimpressum. Very rare.
ł	P	A	380		212	Turritella tigrina et var. Cumingii.
100	P	١,			218	Turritella sanguinea. (Whirls not shouldered.)
193	P	A	381	Gal.	214	Cerithium maculosum and dwarf var., like medio- lene. Abundant.
198	P	A	383		215	Cerithium uncinatum. Common; dead.
200	P	A		G.Mar.	216	Cerithium stercus muscarum. Rare; dead.
	P	A	388	Gal	217	Cerithium interruptum, Mke. Common.
197	P	A	389	Marg.	218	Rhinoclavis gemmata. Rare.
اممر	ı			Marg.	219	Pyrazus incisus. Rare.
206	1	- i	395	?E.Mr.	220	Cerithidea Mazatlanica. Dead.

^{*} A difficulty attends the identification of young specimens of these rare species, no series having yet been obtained. "C. excavata, var.," in Mus. Cum. is exactly intermediate between the two. The young of excavata has a large swelling umbo projecting beyond the margin; the umbo in "? var." has the margin spreading round it, as in onyx, jun., and in consequence appears turned in the contrary direction. The umbilious above the deck exists in both forms; but it is not an absolutely constant character, even in adeaeas

Pan.			Maz.	Other habitats.	No.	List of Cape St. Lucas Shells.
232		C	397	Marg.	221	Litorina aspera. Very rare.
234	P	Č	396		222	Litorina conspersa. Common. A distorted specimen
			ł			has a Lacunoid chink; another a Nassoid shape.
P	5		398	l _ '	286	Litorina Philippii. Rare: v. anteà, var. penicillatu.
273	P		401	E	223	Modulus catenulatus, jun.
244	71		İ		224	Rissoina firmata. Rare.
245		A	408		225 226	Rissoina fortis. Very rare. Rissoina stricta. Rare.
243		, n	1		227	Rissoina clandestina. Dead.
247			1	ł	228	Rissoina infrequens. Dead, worn.
246			414		229	Alvania tumida. 1 sp., off Spondylus.
		C	417	L	230	Barlecia subtenuis. 1 sp.
			411	i	231	
1	1.5		422	١ ـ	232	
			420	L	233	Jeffreysia Alderi. 1 sp.
		li i	419		234	Jeffreysia bifasciata. Very rare.
			425 427		235 236	Alaba supralirata. Not uncommon.  Alaba terobralis. 1 dead, broken specimen.
		A	424		237	Alaba terebralis. 1 dead, broken specimen.  Planaxis nigritella. Dead; some of the specimens
1		1		I	20.	may be a dwarf form of
42			}		237b	Planaxis ? planicostata.
4			435	PL	238	Radius variabilis. 1 sp.
6	P	A	438	E	239	Aricia arabicula. Very rare.
8	P	C	l	E	240	Aricia punctulata. Very rare.
- 1	P		1		241	Luponia Sowerbyi. 1 living and several worn.
- 1	1		ļ	i	242	Luponia albuginosa. Dead ; plentiful.
1			ł			[Cypræa tigris and Pteroceras lambis; doubtless
9	P	A	439	1	243	received through traders.]  Trivia pustulata. Dead.
10	P	A	440	Gal. E.		Trivia radians; intermediate specimens towards
P	P	A	441		245	Trivia Solandri. Dead.
	P	A		Gal.	246	Trivia Pacifica. 1 sp.
12	P	A	442	E	247	Trivia sanguinea. Dead.
		A		1	248	Erato Maugeria. [Exactly like the W. Indian
13		A		O-16 E	249	specimens: also Crag fossil, teste S. Wood.]
122		Ĉ	447	Gulf E	250	Erato scabriuscula. Rare.
124	P	A	448	Gal. E		Strombus galeatus, jun. 1 sp. Strombus granulatus. Abundant; dead.
123	P	-	449	E	252	Strombus gracilior. 1 dead specimen.
P		C		-	253	Subula strigata. 2 dead specimens.
- 1		C	454	E	254	Subula ? luctuosa, jun.
1	P	A	455	l _	255	Euryta fulgurata. Dead.
		A	456	E	256	Euryta aciculata. Dead.
	20	C		1	257	Terebra lingualis. 1 sp.
	P	1	G 450	1	258 259	Myurella variegata. Very rare.
		1	452	1	260	Myurella albocincta. 1 dead specimen.  Myurella subnodosa. 1 dead specimen.
	P	C	457	Ì	261	Pleurotoma funiculata. Rare; dead.
163	3	1	461	E	262	Drillia aterrima. Rare; and var. Melohersi.
-		1	465	Į.	263	Drillia albovallosa. 1 sp., dead.
		1	467	E	264	Drillia luctuosa. 1 sp., dead.
	P	1.	1		265	Drillia maura, Val. Fragment.
		A	1	ŀ	266	Daphnella casta. 1 sp. [Coarser strise than W. L.
				1		species, but scarcely differs from crebriplicata, Rve., "Philippines."]
	l i	4	1	•	267	Cithara stromboides I sp. [Probably=triticea
	i	1	i	1	1	Kien.]

					<del>,</del>		
	Pan. Cat.	La Paz.	Acs- pul.	Max. Cat.	Other habitats.	No.	List of Cape St. Lucas Shells.
	117	P	A		E	268	Conus princeps. Dead.
	113	P	A	4-0	Gal. E	269	Conus brunneus. Dead.
i	118	P	A	476		270	Conus purpurascens and var. regalitalis. Dead.
	114	P	A	480	۱ ا	271	Conus gladiator. Dead.
	116	P	A	481	Gal.	272	Comus mux et var. pusillus [Gld. non Chem.]. Living; plentiful.
1	118	-	σ	G		273	Conus scalaris. 1 sp., dead.
1	P	P	1	l	E	274	Conus tornatus. Rare, dead.
	270	<b>P</b>	A		_	275	Solarium granulatum, and ? var. quadriceps. Com- mon.
		1		400	L	276	Odostomia Pstraminea. 1 sp.
1	~	1	1	489	j j	277	Syrnola lamellata. 1 sp., off Spondylus.
ı	254	1		501		278	Oscilla exarata=terebellum. 1 sp.
	223	1		507		279 280	Chrysallida communi. 1 sp., off Spondylus. Chemnitzia Panamensis. Very rare.
i	227			518 519		281	Chemnitria Adamsi 1 m off Spondulus
ı		1		524	1 1	282	Chemnitzia Adamsi. 1 sp., off Spondylus. Chemnitzia prolongata. 1 sp., off Spondylus.
ļ				532		283	Chemnitzia flavescens. 1 sp., off Spondylus.
ì	194		A	563	L	284	
1	207	1	1.	557	Ĺ	285	Cerithiopsis assimilata. 1 sp.,off Spondylus. Cerithiopsis tuberculoides. 1 sp.
1	208	1	C	391		286	Triforis alternatus. 1 sp., off Spondylus.
Ì	P	l	ľ	00-		287	Scalaria Ptiara. 1 sp.
1	295	P	A	570	Gal.	288	Natica maroccana. Com. W. Afr.; PPacific Is.
	P	P	A			289	Natica zonaria. Common. Operc. grooved as in canrena [=alapapilionis, var., teste Rve.: non Chem.].
		1	A	l		290	Natica catenata. Common.
	302	P	Ā	576	E	291	Polinices uber. Common. [The young shells go through all shapes, from globose to pointed.]
1	то	1	A	G	Gal.	292	Operc. thin, light green, horny.]  Polinices otis et var. fusca. Rare; dead.
1	Þ	$ _{P}$	1	Ğ	Marg.	293	Polinices bifasciata. Living; rare.
		P	A	Ğ	E E	294	Neverita glauca. 1 sp.
		1	1.	577	~	295	Lamellaria, sp. ind. 1 sp.
	146		A	579		296	Ficula ventricosa. Not uncommon. Animal pre- served of both sexes, and of surpassing beauty.
	66		С	G	E.Mar.	297	Malea ringens. 1 dead sp. [Fossil, Atlantic shores,
	112	P	A	G	Gal.	298	Oniscia tuberculosa. Very rare.
-	111	P	A	G	Gal.	299	Levenia coarctata. Very rare.
	110	P	C			300	Bezoardica abbreviata. 1 living, with very small normal operculum. Common; dead. [Varies greatly in form and sculpture, like the Texan
		ł	l	١	1		"analogue," which may be conspecific.]
-	131		C		l	301	Triton vestitus. 1 sp. [Scarcely differs from pilearis.]
	132	1	l	1	1	302	Ranella cælata. 1 sp., dead.
	•				L	303	Ranella Californica. Very rare. Grows 4 inches long.
	151	İ	A	582	Gal.	304	Latirus ceratus. 2 dead sp.
	1	<b>P</b>	١.	584	E	305	Fasciolaria princeps. 2 dead sp.
	18		A			306	Mitra crenata, Rve., teste Dohrn. 1 sp. [P=nu-cleola.]
	19	1	l	l	1	307	Mitra solitaria, C. B. Ad. 1 sp.
	20-	·l	١.	586	Gal. E		Strigatella tristis. Rare.
	_	1	A	G	E	309	Eneta harpa. 1 sp.
	P	1	1	589		310	Volutella margaritula. Off Spondylus; common.
	14	1	1	587		311	Marginella minor. Off Spondylus; rare.
		<u>'                                    </u>	<u>.                                    </u>	<u> </u>	<del>`</del>		

			Mas. Cat.	Other habitata	No.	List of Cape St. Lucas Shells.
		A			312	Volvarina varia. Rare. [Cannot be distinguished
		A		PWI	313	from some W. I. specimens.]  Persicula imbricata. 1 sp. [Can scarcely be sepa-
	ň				314	rated from interrupta, jun. Also Guacomayo.]  Persicula phrygia. Rare. [Closely allied to fru-
						mentum. Differs from the W. I. sagittata by having the painting in loops instead of zigzag, and an orange callosity over the sunken spire, bordered by a spotted sutural line.]
36	P	6	G	Marg.	315	Oliva porphyria. 1 sp.
?33	P	A	591	100	316	Oliva Melchersi, var. Rare.
	P		?592	Marg.	317	Oliva subangulata. Very common, dead. [This species, very rare elsewhere, is known by the shouldered shape, toothed paries, and violet-
	P		600		318	stained mouth and columella.]
	P	C	596		319	Olivella dama. Rare; dead.
39	4	A	595		320	Olivella tergina. Rare; dead.   Olivella undatella. S.sp.; dead.
•	11	C	601		321	Olivella zonalis. Rare; dead.
		-	598	PWI	322	Olivella v. aureocincta. 3 sp.; dead.
		A	597	E	323	Olivella anazora. Very rare; dead. Perhaps a var. of
34	P	A		-	324	Olivella gracilis. Extremely abundant. [With
01	7	**			022	many varieties: among which is one with dark
						median and sutural bands and light spire; another with dark spire; another pure white, of which the young is inconspicua, C. B. Ad. The Acapulcan varieties are somewhat different.]
	194	A	G	200	325	Harpa crenata. Dead.
76	P	A		E.Mar.		Purpura biserialis. Abundant.
	P	A	607	~ .	327	Purpura triserialis. Common.
69	P	A	608	Gal.	328	Purpura triangularis. Not uncommon.
-	P	A		G.Mar.	329	Purpura patula. Common. Also West Indies.
P	P	C	605	E	330	Purpura muricata. Rure; dead at C. S. L.; living at Socorro Island.
	P			Gal.	331	Purpura planospira. Dead shells at C. S. L. and La Paz; abundant and fine at Socorro Island.
74			611	7	332	Rhizocheilus nux+tall var. [= Californicus.]
107		A		Gal.	333	Sistrum carbonarium. Living; plentiful.
89	P	A	613	WI	334	Nitidella cribraria. Abundant.
94	121	A	615	E	335	Columbella major. Rare.
86	P	A	617	E	336	Columbella fuscata. Abundant.
		A	1		337	Columbella festiva. Not rare.
90	P	7		Gal.	338	Columbella hæmastoma. Not rare.
				E	339	Columbella solidula. Abundant .
		A		E	340	Columella Reevei [= Sta. Barbarensis, Cpr. (error)].
	31		1	E	341	Columella baccata. Rare.
	P		991	2.2	342	
	P			L. Mar.		Nassa tegula. Rare; pale var.
55		C	632		344	Nassa versicolor. Rare; dead.
45	P	A			345	Nassa corpulenta. Very rare.

^{*} The young shell is thin, semitransparent, with Alaboid tuberous vertex. The nuclear part is rather more tunid than the next whirl, and set slanting as in some Chrysodomi. Adolescent, whirls smooth, except a sutural line. Sculpture of adult gradually developed, with spiral lines, sometimes all over, sometimes only anteriorly and posteriorly. Last whirl sometimes with blunt radiating riblets, but generally smooth. Siphonal notch deeply cut back, as in Strombina, to which the species may belong.

1863.

				Other habitats.	No.	List of Caps St. Lucas Shells.
	P			Gal.	346	Funus Thouarsii [+Novæ-Hollandiæ, Rve.]. Rare dead.
	$\boldsymbol{P}$		639	E	847	Siphonalia pallida. Very rere.
109				Gal.	348	Engina Reeviana. 1 sp.
P	ł	A		Gal.	849	Engina crocostoms. 1 sp.
P	l	C	647		350	Anachis coronata. Very rare.
	1		652	E		Anachis taniata [ = Ga-koinei]. Very rare.
99				- 1	852	Anachis pulchrior. Very rare.
			G			Anachis Ppallida, Phil. Very rare.
98		l I	_	E	354	Anachis Pparva, var. Dead shells : may be pyg
	1			-	002	mea, var.
•	1		650		355	
(100	<b>'</b>	A	(651	) (E)	356	
(	ľP.	C	657	, (-)	357	
87	-			E	358	
64	P	A	662			Pisania sanguinolenta. Dwarf var.; common.
60	_	Ā			360	Pisania lugubris. Rare; dead.
	P	Ĉ	664		361	Murex plicatus. Rare; dead.
140	P	A	665		362	
	P		669		363	
	P		671		364	
136		A	673		365	Muricidea dubia. Rare; dead.
			J. J		866	Argonauta argo. 1 large sp. of the ?var. papyracea. Pelagic.
					367	Octopus, sp. Pelagic.

As would be expected, the bulk of these species (203 out of 367) are the same as have been already enumerated in the Reigen Catalogue. Of those which do not appear in the Mazatlan lists, no fewer than 37 appear in the Panama collections (beside 10 others, known to inhabit the equatorial region). Of those not quoted from Mazatlan, 34 are also found in the Acapulco region, and 30 at La Paz. Of the whole number, 79 have also been found in South America, and 28 in the Galapagos. 38 have also been found in Margarita Bay, of which Pyrazus incisus and Siphonaria equilirata are Lower Californian rather than Gulf species; but only 13 belong to that portion of the Lower Californian fauna which is known to reach 8. Diego, exclusive of the same number of Gulf species, which also stray into the 8. Diegon district. There are also 10 species, which (with more or less distinctness) represent West Indian forms. Of these, five, viz. Heterodonax bimaculatus, Evato Maugeria, Volvarina varia, Persicula imbricata and phrugia, are new to the Gulf fauna: the other five appear in the Reigen Catalogue.

as the number of species and of specimens is concerned, have been made for the Smithsonian Institution by Mr. J. G. Swan, teacher at the Indian Reserve, Neeah Bay, W. T. For several years * valuable consignments have been received from him of shells collected at Cape Flattery, Port Townsend, and other stations. Latterly he has trained the native children to pick up shoreshells in large quantities. The labour of sorting and arranging these has been enormous; it has, however, been repaid not only by observing the

^{*} In consequence of boxes having been received at different times, through the accidents of transit, it has not always been possible to ascertain with certainty to whom, among simultaneous collectors, should be allowed priority in the discovery of new species.

variations of form in large numbers of individuals, but by the discovery of several new species and the addition to the district-fauna of many others. The duplicates are made-up in series for distribution by the Smithsonian Institution; and, though of the worst quality from a "collector's" point of view, they will be found very serviceable by real students, being carefully named in accordance with this Report. He has now received a dredge, constructed for him by Dr. Stimpson; and if he succeeds in training the young Indians to use it, there is little doubt that a rich harvest of fresh materials will shortly be obtained. Some of the collections were made on the neighbouring shores of Vancouver's Island, among which was a large series of Pachypoma gibberosum, Chem., with attached Bivoria, both of an essentially Eastern Pacific type, the former having been brought from Japan by Mr. A. The Indians have taken a fancy to the opercula of this shell for the purpose of ornamenting their canoes. As it is an article of trade among themselves, it is remarkable that so large a shell should have so long escaped the notice of collectors. Dead specimens have been washed-up in California; but it is not known even to enter the Straits of De Fuca alive. The shorepickings of the Indian children, which have already added 25 species to science, are singularly free from ballast-importations, although they present a few (supposed) extra-limital shells, probably washed-up by the ocean currents. The following are the species new to the Vancouver fauna; the remainder will be found tabulated in the 7th column of the general Table, par. 112, infrd.

Waldheimia Coreanica, valves

2. Xylotrya pennatifera, teste Jeffr.

- 3. Clidiophora punctata, one worn valve.
  4. Macoma ?edentula. Two living shells may be the young of this species, or an extreme var. of inquinata.
- 5. Mæra salmonea. Plentiful.

6. Angulus variegatus. Rare.
7. Semele rubrolineata. One large valve may belong to this species, or (more probably) be distinct and new.

- 8. Standella? Californica. One young valve.

  9. Miodon prolongatus, n. subg., n. s. Several valves of this curious shell, intermediate between Lucina and Venericardia, accord with forms not before eliminated, from the Coralline Crag and Inferior Oolite.
- Lazaria subquadrata. One valve.
   Diplodonta orbella. Very large valves.
   Kellia (var.) Chirmii. A few valves.
- 13. Adula stylina. Plentiful.

- Axinæa (?septentrionalis, var.) subobsoleta. Numerous valves.
   Siphonaria Thersites, n. s. Rare, dead. Like tristensis and other Cape Horn and N. Zealand types. The genus was not known north of Margarita Bay.
   Mopalia (Kennerleyi, var.) Suannii. One sp. and valves.
- 17. Ischnochiton (Trachydermon) Nuttallin. One sp.

- 18. Haliotis Kamischatkana. Rare.

  19. Pachypoma gibberosum, Chem. Living; plentiful.

  20. Leptonyx sanguineus, Linn. Very plentiful. (Japan, A. Ad.; = Homalopoms sanguineum, anteà p. 588 (nom. preoc.); Mediterranean, Philippi.)
- 21. Chlorostoma funebrale (et var. subapertum. One sp.).

22. Calliostoma canaliculatum. Living; abundant.
23. Margarita cidaris, n. s. One fresh specimen, with aspect of Turcios.
24. Margarita helicina. Very rare.

- 25. Gibbula parcipicta. One sp. 213. Gibbula succincta, n. s. Rare.
- 27. Gibbula lacunata, n. s. One sp.

```
28. Gibbula funiculata, n. s. Very rare.
```

29. Hipponyx cranioides, n. s. Plentiful. 30. Bivonia compacta, n. s. Frequent on Pachypoma; externally resembles Peteloconchus macrophragma.

31. Bittium (Pvar.) couriens. Common, dead.
32. Lacuna porrecta, n. s. Plentiful, with intermediate Pvars. exequata and effuea.

33. Lacuna (? solidula, var.) compacta. Rare.

- Lacuna variegata, n. s. Not common; resembles the Japanese L. decorata.
   Isapis fenedrata, n. s. Very rare.
   Alvania reticulata, n. s. Very rare.

- 87. Alcania filosa, n. s. One specimen. 38. Assiminea subrotundata, n. s. One specimen.
- 89. ? Paludinella, sp. One specimen.
- 40. Mangelia crebricostata, n. s. Very rare.
  41. Mangelia interfossa, n. s. Several dead specimens.
  42. Mangelia tabulata, n. s. Several dead specimens.
  43. Daphnella effusa, n. s. One broken specimen.

- 43. Dapaneuu eyusu, n. s. and Pvar. Gouldii. Very rare.
  45. Odostomia satura, n. s. and Pvar. avellana. Very rare.

- Odostomia satura, n. s. and ?var. Gouldn. Very rare.
   Odostomia nuciformis, n. s. and ?var. avellana. Very rare.
   Odostomia inflata. Very rare.
   Odostomia tennisculpta, n. s. Very rare.
   Scalaria Indianorum, n. s. Rare.
   Opalia borealis. Very common. This fine species, indicated by Dr. Gld. (E. E. Mol., p. 307) under Scalaria australis, closely resembles O. Ochotensis, Midd. It is not referred to in the 'Otia,' and the locality was naturally supported. suspected.
- 50. Cerithiopsis munita, n. s. Rare. 51. Cerithiopsis columna. Very rare.
- 52. Cerithiopsis tuberculata. Rare. No differences have been detected on comparing 53. Triforis adversa. the Herm and Neeah Bay specimens.
- A few specimens differ from the decorticated T. cancel-54. Trichotropis inermis. lata, and agree with Hinds's diagnosis.

- 55. Cancellaria modesta, n. s. One sp. and fragment.
  56. Velutina prolongata, n. s. Very rare.
  57. Olivella biplicata. Very fine and abundant.
  58. Purpura (var.) fuscata. Forbes's species, the locality of which was before uncertainty in home connected by seesy temperature with the normal sarrioda. certain, is here connected by easy transitions with the normal saxicola.
- 59. Columbella (var.) ! Hinderi. May be a stunted form of A. gausapata.
- 60. Amycla tuberosa. Rare.
- 61. Chrysodomus tabulatus. One beautifully perfect specimen; described and figured from Mr. Lord's broken shell, sent simultaneously.

The following appear to be due to currents:—

- 62. Pachydesma crassatelloides. Fragment.
- 63. Fissurella volcano. One broken specimen.
- 107. A collection of shells received from the Farallones Islands by Mr. R. D. Darbishire, of Manchester, soon after the publication of the first Report, contained several species at that time new to science, but in too imperfect a condition for description. Among them were-

Martesia interculata, Maz. Cat., no. 19. Burrowing in Haliotis rufescens. Odostomia inflata, n. s. Young shells, abundant, in Haliotis rufescens. Ocinebra lurida. Ocinebra interfossa, n. s.

Collections from the same locality were afterwards sent by the Rev. J. Rowell, and are tabulated with the rest of the Smithsonian series in the 4th column of the general Table, par. 112.

108. In 1860, previously to the commencement of the Californian Geological Survey, Dr. J. G. Cooper joined a military expedition across the Rocky Mountains, under the command of Major Blake, U.S.A. Having forwarded his notes and specimens to Judge Cooper, they were placed in the hands of Mr. Thomas Bland, of New York. He prepared a "Notice of Land and Freshwater Shells, collected by Dr. J. G. Cooper in the Rocky Mountains, &c.," which appears in the 'Ann. Lyc. N. H. of N. York,' 1861, pp. 362 et seq. We have here the judgment of one of the most distinguished students of American land-shells, whose labours on the tropical forms have accumulated facts so important in their bearing on the Darwinian controversy *. The following is an outline of the Report, which is peculiarly valuable for the copious notes on the station and distribution of species:-

Helix Townsendiana, Lea. "Both alopes of the Bitter Root Mountains, from 2200-5600 ft. high. Large var. at the base of the range to 4800 ft. Small var. in dry prairie at junction of Hell-Gate and Bitter Root Rivers; also in Wash. Ter., west of the Coast Mountains. The most wide-spread of the species," J. G. C.; Puget Sound, Cape Disappointment, teste Bland.
 Helix Mullans, n.s., Bland. "Under logs and in dry pine-woods: dead, Cour d'Alêne Mission: living, west side of Bitter Root Mountains," J. G. C.; St. Joseph's River, 1st Camp, Oregon, teste Binney. Closely allied to H. Columbiana, Lea, = labiosa, Gld. A beautiful hyaline var. was found under a stone, by the Bitter Root River, 4000 ft. high.

stone, by the Bitter Root River, 4000 ft. high.

3. Helix polygyrella, n.s., Bland. "Moss and dead wood in dampest parts of spruce-forests; common on the Cœur d'Alêne Mountains, especially eastern slope," J. G. C. Entirely unlike any other N. A. species, and having affi-

nity with H. polygyrata from Brazil.

4 Helix Vancouverensis, Lea, = H. concava, Bin. sen. olim, non postea, nec Say; = H. vellicata, Fbs., certainly; = H. sportella, Gld., probably. "West side of Cœur d'Aléne Mountains, W. T., in forests of Coniferæ, such as it inhabits west of the Cascade Range. Between these two ranges, for 200 miles, is a wide plain, quite uninhabitable for snails, on account of drought. The sp. and *H. Townsendiana* probably travel round it through the northern forests in lat. 49°, "J. G. C. Also Crescent City, Cal., Newcomb; Oregon City, Whidby's Is., W. T.; Mus. Bland. Found on the Pacific slope, from

Puget Sound to San Diego.

5. Helix strigosa, Gld. "Æstivating under pine-logs, on steep slope of shale, containing veins of lime, 4000 ft. high, near Bitter Root River, Rocky Mountains," J. G. C.; Big Horn Mountains, Nebraska; Rio Piedra, W. New Mexico; teste Bland. One sp. reached N. York alive, and deposited six young shells. [?May not these have been abnormally hatched in the body of the parent, from the unnatural confinement.]

6. Helix Cooperi, Binn., jun. "East side of Mullan's Pass, Rocky Mountains, W. T., at an elevation of 5500 ft.," J. G. C.; Black Hills of Nebraska, Dr. V. Hayden; Big Horn Mountains, Nebraska; west side of Wind River Mountains; Rio Piedra, W. N. Mexico, teste Bland. Passes by varieties towards H. strigosa, Gld. Hayden's shell from Bridger's Pass, Nebr., referred to by Binn., jun., Journ. A. N. S. Phil. 1858, p. 115, as H. solitaria, var., is the young of this species.

7. Helix solitaria, Say. Both slopes of Cour d'Alêne Mts., 2500 feet high, J. G. C.

Also Prairie States, teste Bland.

8. Helix arbores, Say. "Damp bottom lands, along the lower valley of Hell-Gate River, 4500 ft. high," J. G. C. Found from Labrador to Texas, and from Florida to Nebraska; also on the River Chama, N. Mex.; also Guadaloupe, teste Beau and Férussac, letter to Say, 1820; teste Bland.

Vide "Geographical Distribution of the Genera and Species of Land Shells of the West Indies, &c.," by Thomas Bland. Reprinted from Ann. Lyc. Nat. Hist., vol. vii. New Tork 1864

In the 'Ann. Lyc. N. H. New York,' 1861, p. 287, the Rev. J. Rowell, of San Francisco, describes the second species of Pupa * discovered on the

western slope, viz. "P. Californica, Row., San Francisco: plentiful."
On February 4th, 1861, Dr. Wesley Newcomb published (Latin) diagnoses of the following Californian Pulmonates in the Proceedings of the Cal. Ac. Nat. Sc., vol. ii. pp. 91-94. A second Part bears date March 18th, pp. 103, 104.

- Page.
  91. Helix Bridgesii, Newc. San Pablo, Cal. 1 sp. Distinct from all described forms.

  " Helix Traskii, Newc. Los Angelos, Cal. "Distinguished from H. Thouarsii at a glance."

  Carear Valler More rounded than diaphana, Drap.
- 92. Vitrina Pfeifferi, Newc. Carson Valley. More rounded than diaphana, Drap.
- 94. Pisidium occidentale, Newc. Ocean House, S. Francisco, Rowell.
  103. Helix Carpenteri, Newc. Tulare Valley, Mus. Cal. Ac. Belongs to the Cyclostomoid group, and has the aspect of a desert species. [Quite distinct
- from H. Carpenteriana, Bland, Florida.]

  Helix Ayresiana, Newc. Northern Oregon; Mus. Cal. Ac. Resembles H. reticulata, Pfr., a Californian species not identified by the author.
- 104. Physa costata, Newcomb. Clear Lake, Cal., Veatch, Mus. Cal. Ac.

In the 'Proc. Ac. Nat. Sc. Philadelphia, 1861,' pp. 367-372, Mr. W. M. Gabb published "Descriptions of New Species of American Tertiary Fossils," in which occur several Californian shells. The authorities for the localities are not given, and the diagnoses are in English only. Considerable confusion often arises from the study of tertiary fossils without knowledge of recent shells, and vice versa. Mr. Gabb's writings on the Cretaceous fossils of America display an ability with which this paper is perhaps not commensurate. Some errors which had been found very difficult to understand are here corrected by the author himself, who regrets the incompleteness of his earlier work.

- 368. Turbonilla aspera, Gabb. Sta. Barbara, Miocene. [= Bittium, sp., teste Gabb,
- Modelia striata, Gabb. Sta. Barbara, Miocene. [= Lacuna carinata, Gld. teste Gabb MS. and specimens. Mr. Gabb considers that Litorina Pedroans. Conr., is the same species, which is probably not correct.]
   Sphenia bilirata, Gabb. Sta. Barbara. [Description accords with Saxicars.]
- arctica, jun., var.; but Mr. Gabb considers it a good species.]

  Venus rhysomia, Gabb. ? Miocene, Sta. Barbara. [= Psephis tantilla, Gld.,
- teste Gabb MS. and specimens.]

  871. Cardita monilicosta. f Miocene, Sta. Barbara. [Description accords with Venericardia ventricosa, Gld. jun.; but Mr. Gabb considers it a good species.] Morrisia Hornii. ? Miocene. Sta. Barbara. "First pointed out by Dr. Horn in a rich fossiliferous marl, and not uncommon."

In the 'Proceedings of the Calif. Ac. Nat. Sc.' for April 7th, 1862, pp. 170-172, Mr. W. M. Gabb published detailed English "Descriptions of two Species of Cephalopoda in the Museum of the Academy," of which one, Onychoteuthis fusiformis, is said to be from Cape Horn, the other from California.

- 170. Octopus punctatus, Gabb. Common near San Francisco. Also abundant in Scammon's Lagoon, Lower California, Capt. C. M. Scammon. Arms more than seven feet long, Dr. W. O. Ayres. "Differs from O. megalocyathus,
- That the race of small Pupe is very ancient on the North American continent, as in Europe, is evident from the very interesting discovery, by Prof. Dawson, of a fossil Pupo, in situ, nestling in an upright tree, fossilized in the Nova Scotian coal-beds; which can scarcely be distinguished, even specifically, from some living forms.

Couth., E. E. Moll. p. 471, in absence of lateral membrane, size of mouth and cupules, and general coloration."

171. Onychoteuthis fusiformis, Gabb. "Cape Horn," Mus. Ac. [San Clemente Is., Cal., Cooper, M.S.]

From the 'Proc. Cal. Ac. N. S.,' 1863, p. 11, it appears that at least one molluse, a Teredo or Xylotrya, has already established for itself an economic celebrity. Piles have been entirely destroyed in six months from the time they were placed in the water.

On March 2, 1863, Mr. Auguste Remond published, in the same Journal, English "Descriptions of two new Species of Bivalves from the Tertiaries of

Contra Costa County: "-

Cardium Gabbii, Rem. Late tert. deposit near Kirker's Pass, in shelly sand, with Tapes regularis, Gabb, and Murex ponderosus, Gabb, both extinct. "Easily recognized by heavy hinge and enormous laterals; lunule carinated." [? Liocardum.]
 Ostrea Bourgeoisii, Rem. Same locality.

On April 20, 1863, Dr. Cooper described (in English) the following molluse, of which the only species previously known is from Cuba:-

21. Gundlachia Californica, Rowell. Fig. 5 (three views). Fifty specimens on water-plants in clear, stagnant ponds, at Marysville, Feather River, Rowell.

On January 8, 1864, Dr. Newcomb described (in Latin) the following, with other Pulmonates from the State Survey, already tabulated in p. 609:-

115. Helix Hillebrandi, Newc. Tuolumne Co., Cal. One recent and several fossi shells, M. Voy. Like H. Thouarsii, but depressed and hirsute.

The latest contribution to the malacology of California is one of the most interesting. It is described (in Latin) by Dr. Newcomb, Feb. 1, 1864:—

- 121. Pedicularia Californica, Newc. One specimen from coral growing on a mon-ster Echidnocerus, very deep water, Farallones Is., D. N. Robinson. "As beautiful as P. elegantissima, Desh., from Is. Bourbon." [Mr. Pease also obtained a deep-water Pedicularia from coral in the Pacific Is., which Mr. Cuming affiliated to the Mediterranean P. Sicula. Dr. Gould (Otia, p. 215) also describes P. decussata, coast of Georgia, 400 fm., U. S. Coast Survey.
- 111. The following descriptions of species, and notes on habitats and synonymy, have been collated from various American scientific periodicals, chiefly by the assistance of Mr. Binney's 'Bibliography.'

In the 'American Journal of Science and Art,' O. S., vol. xxxviii. p. 396, April 1840, Dr. A. A. Gould records the following species, said to be from

"California." His Trochus vittatus is not known:

Murex tricolor et bicolor. Cardium Californianum.

Trochus vittatus. Bulimus undatus.

In the 'Annals of the New York Lyceum of Natural History,' vol. iv. 1846, No. 5, p. 165, Mr. John H. Redfield first described Triton Oregonense. Straits of San Juan de Fuce: plate 11. fig. 2.

In the 'Proceedings of the Academy of Natural Sciences of Philadelphia,' 1848, vol. iv. p. 121, Mr. T. A. Conrad described new genera, and gave notes or Parapholas Californica, Cryptomya Californica, and Psammobia Californica, altering Osteodesma hyalina (nom. preoc.) into Lyonsia Floridana. In the same work, March 1854, vol. vii., Mr. Conrad described Cyathodonta undulata. He also states that Gnathodon trigonum. Petit, is probably identical with G, Lecontei, Conr. [?] (nom. prior), and alters genus Trigonella to Pachydesma.

In the 'Proc. Boston Ac. Nat. Hist.,' July 1851, vol. iv. p. 27, Dr. A. A. Gould published "Notes on Californian Shells," and, in vol. vi. p. 11, described Helix ramentosa, California, and Helix damascenus, from the desert east of

In the 'Proceedings Ac. Nat. Sc. Phil.,' April 1856, vol. viii. pp. 80, 81, Dr. Isaac Lea described the following species of new freshwater shells from California:

Pompholyx effusa. Sacramento River. Melania Shastaënsis. Shasta and Scott Rivers. Melania nigrina. Clear Creek, Shasta Co. Physa triticea. Shasta Co. Pianorbis Traskii. Kern Lake, Tulan Co. Lymnæa proxima. Arroya, St. Antonio. Ancylus patelloides. Sacramento River.

#### and offered notes on

Margaritana margaritifera, Lea, = Alasmodonta falcata, Gld., = Alasmodonta Yubaënsis, Trask. Klamath and Yuba. Anodonta Wahlamatensis, Lea, = A. triangulata, Trask, + A. rotundovata, Trask.

Sacramento River.

Anodonta angulata, Lea, + A. feminalis, Gld., + A. Randalli, Trask. Upper San Joaquin.

Helix Oregonensis, Lea. Point Cypress, Monterey Co. Helix Nickliniana, Lea. Tomales Bay and Dead Man's Island.

Helix Californiensis, Les. Point Cypress. Lymnæa exigua, Lea. San Antonio Arroya. Lymnæa pallida, Ad. San Antonio Arroya. Physa heterostropha, Say. Los Angeles. Melania occata, Hds. Sacramento River.

Melania (Paludina) seminalis, Hds. Sacramento River.

Planorbis trivolvis, Say. Horn Lake. Planorbis ammon, Gld. Lagoons, Sacramento Valley.

In the New Series of the 'Proc. Ac. Nat. Sc. Philadelphia' occur descriptions and notes on species, as under :---

Feb. 18. 1857. Helix intercisa, W. G. Bin., = H. Nickliniana, Bin. sen., var. 1857. Succinea lineata, W. G. Bin. Nebraska. Mr. T. A. Conrad described the genus Gonidea for A. angulata, Lea; and for Gonidea Randalii, Trask, and Gonidea 1857. June. 165. feminalis, Gld.; regarding the three species as probably distinct. [Dr. Lea, however, considers them varietal.]
Dr. I. Lea described Planorbis Newberrys. Klamath Lake 1858. March. 41. and Canoe Creek, California. 1860. March. 23. Melania Newberryi, Les. Upper Des Chutes River, Oregon, Newberry.

In the "Notes on Shells, with Descriptions of New Genera and Species," by T. A. Conrad, reprinted from the 'Journ. Ac. Nat. Sc. Phil.,' Aug. 1849, are given the following synonyms, pp. 213, 214:-

Petricola Californica, Conr., = Saxicava C., Conr., = P. arcuata, Desh.
Petricola carditoides, Conr., = Saxicava c., Conr., = P. cylindracea, Desh.
Silipua Nuttallis, Conr., = Solecurtus N., Conr., = Solecurtus maximus, Gld., non Wood, = Solen splendens, Chenu. Siliqua lucida, Conr., = Solecurtus L. Conr., = Solecurtus radiatus, Gld., non Linn. 120

In his "Synopsis of the Genera Parapholas and Penitella," from the same source, p. 335, are given as synonyms-

Parapholas Californica, Conr., = Pholas C., Conr., = Pholas Janelli, Desh. Penitella Conradi, Val., = Pholas penita, Conr., = Pholas concamerata, Desh. Penitella melanura, Sby., = Penitella Wilsoni, Conr. (not Parapho'as bisulcata).

In the elaborate but somewhat intricate "Monograph of the Order Pholadacea," &c., by G. W. Tryon, jun., Philadelphia, 1862, the following species are quoted from the West Coast, and form the conclusion of the marine shells hitherto described, so far as known to the writer:-

- 19. Rocellaria [Gastrochana] ovata, Sby. Panama, W. I., and Charleston, Stimpson. "Not the slightest difference between the Pacific and Atlantic specimens."
- 74. Pholas (Cyrtopleura) trumcata, Say. Massachusetts; S. Carolina; Payta, Peru, Ruschenberger; Chili.

- Ruschenberger; Chili.
  77. Dactylina (Gitocentrum) Chiloënsis, King, 1832, = Ph. laqueata, Sby., 1849.
  Peru, Chili [Panama, Jewett]. Scarcely differs from D. Campechensis, = Ph. oblongata, Say, = Ph. Candeana, D'Orb.; Southern U. S., W. I.
  82. Navea subglobosa, Grav, Ann. N. H. 1851, vol. viii. p. 385. California. ["In a hole in a shell. Cabinet Gray." Neither shell nor authority stated.]
  85. Pholadidea (Hatasia) melanura, Sby. Lower California, = Penitella Wilsonis, Conr., J. A. N. Sc. Ph., fig. 4 (non 5). "This error in figuring led Dr. Gray to misunderstand both the species and Conrad's idea of the genus Penitella" [Vide Reit Assoc Rep. 1856, p. 265]
- Penitella." [Vide Brit. Assoc. Rep. 1856, p. 265.]

  87. Penitella penita. [Mr. Tryon erroneously quotes (Netastoma) Darwinii, as well as Ph. cornea, as synonyms.]
- 88. Jouannetia (Pholadopsis) pectinata, Conr.,= Triomphalia pulcherrima, Sby.
  "California" [no authority], W. Columbia.

  127. "Pholas retifer, Mörch, Mal. Blätt. vii. 177, Dec. 1860. One broken right
  valve. Hab. Real Llejos." = Dactylina (Gitocentrum) Chiloënsis, King [teste

112. The following Table contains a complete list of all the Molluscs which have been identified, from Vancouver Island to S. Diego, arranged so as to show at the same time their habitat, and the principal collectors who have obtained them. The species in the first column were obtained by Prof. Nuttall; in the second, by Col. Jewett. The third column (marked B.A.) contains the species tabulated from other sources in the First Report. Those to the right of the double column are the fresh explorations recorded in this Supplementary Report. The fourth column contains the shells brought by the Pacific Railroad Expeditions, as well as the species sent to the officers of the Smithsonian Institution by the Rev. J. Rowell and their various correto indents. The fifth column ('Ken.') contains the species of the American, and the sixth ('Lord') of the British Norta Pacific Boundary Survey. The seventh records the collections of Mr. Swan and his Indian children; the last, those of Dr. Cooper in the Californian Geological Survey. As a large proportion of the species are as yet unknown, and the diagnoses will be found scattered in various periodicals, some of which are rarely accessible in this country, it has been judged needful to add a few words of description, with references to well-known books. By this means the student will have before him a compact handbook of the fauna, and will distinguish at a glance the range of localities, and the amount of authority for each. For the full synonymy, the previous pages of the two Reports must be consulted.

Results of the Explorations in the Vancouver and Californian Province. 1864. (Omitting the doubtfully located and undetermined species.)

The letters stand for the localities in which the shells were collected, as follows:-

- V. Vancouver Island, Straits of S. Juan de Fuca, and adjoining shores of Washington Territory, formerly known as 'Oregon.'
- P. Puget's Sound and the neighbourhood.
- O. Oregon; and the region on each side of the Columbia River.
- C. California; or the district north of the peninsula, generally.
- L. Peninsula of Lower California.

- M. Neighbourhood of Monterey.
- В Sta. Barbara. D. The region between S. Diego and S. Pedro.
- I. The islands: in the 4th column, generally the Farallones; in the last, the Sta. Barbara group.
- H. Species obtained from the backs of Haliotids; locality unknown; probably Lower California.
- fr. Fragments only.

	Nutt.	Jew.	B. A.	Smiths. Inc.	Ken.	Lord.	Swan.	Cooper.
Defrancia intricata	_	_	_	_	-	_		D
1. Lingula albida	_	_	D	_	_	_	_	BD
2. Rhynconella psittacea	<b> </b> —	_		. —	-	V		
3. Terebratula unguiculus	<b> </b> —	<b> </b> —	_		_	V	V	MD
4. Waldheimia pulvinata	_		P	-	P	_	<u>                                     </u>	
5. — Californica	<b> </b> —	<b> </b> —	C	_	_	-	I — I	I
6. — Grayi		_	_	_	_		l — I	I
7. Terebratella Coreanica	<u> </u>	—	—	_	—	<b> </b> —	V	
8. —— caurina	_	<b> </b> —	P		P	V	$ \mathbf{v} $	PI
9. Xylotrya pennatifera 0. —— fimbriata	-	l —	_	F	_	_	V	
.0. — fimbriata	-		l —	_	_	V		

# Guide to the Diagnosis of the Vancouver and Californian Shells.

# Class Polyzoa. Family Discoporidæ.

Defrancia intricata, Busk. Maz. Cat. no. 13. From Southern fauna The remaining species in this class have not yet been determined.

# Class Palliobranchiata. Family Linguide.

- 1. Lingula albida, Hds. Voy. Sulph.; Rve., Hanl., Davidson et auct. 20 fm. c. Cp. Family Rhynconellidæ.
- 2. Rhynconella psittacea, Linn. auct. E. & W. Atlantic: circumpolar.

#### Family Terebratulidæ.

- 3. Terebratula unquiculus, n. s. Like Terebratella caput serpentis in size, shape, and sculpture; but loop incomplete in adult, as in T. vitrea. 6-20 fm. not r. Cp. Waldheimia pulvinata, Gld. E.E. Smooth, subglobular, ashy. 80 fm., living,
- Cp., CI.
- 5. ? Waldheimia Californica, Koch, non auct. Colour ashy. Intermediate between Coreanica and globosa, Lam., Rve. (which is Californica, auct. non Koch).

  6. Waldheimia Grayi, Davidson. Very transverse, reddish, deeply ribbed.

  7. Terebratella Coreanica, Ad. & Rve. Voy. Samarang. Size of globosa; reddish.

- =miniata, Gld. Jun.?=frontalis, Midd., Asia.

  8. Terebratella caurina, Gld. E.E. Like dorsata; subtriangular, ashy, with strong or faint ribs.

## Class Lamellibranchiata. Family Teredide.

- 9. Xylotrya pennatifera, Blainv. Ann. Nat. Hist. 1860, p. 126.
  10. Xylotrya fimbriata, Jeffr. in Ann. Nat. Hist. 1860, p. 126; = palmulata, Fbs. & Hanl., non Lam. Phil.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
11. Zirphæa crispata 12. Pholadidea penita 13. — ovoidea 14. Netastoma Darwinii 15. Martesia intercalata 16. Parapholas Californica 17. Saxicava pholadis 18. Glycimeris generosa 19. Mya truncata 20. Platyodon cancellatus 21. Cryptomya Californica 22. Schizothærus Nuttalli 23. Darina declivis 24. Corbula luteola 25. Sphænia ovoidea 26. Neæra pectinata	B  B  B  		COM COPPCCC	VOFMB H I MCH PF FD F OFM —	P	v	P V V V V V V V V V V V V V V V V V V V	D.fr. MD M C D D D D FDI D D D BI

# Family Pholadida.

11. Zirphæa crispata, Linn. suct. E. & W. Atlantic and circumpolar.

12. Pholadidea penita, Conr. Hanl. auct. = concameruta, Desh. Shape from elongate to ovoid; umbonal reflexion closely adherent.

13. Pholadidea ovoidea, Gld. Otia. Umbonal reflexion with anterior opening.

14. Netastoma Darwinii. Sby. New subgenus: valves prolonged, like duck's bill instead of cups. Surface with concentric frills. Quoted from "S. A."

15. Martesia intercalata, Cpr. Maz. Cat. no. 19. From Southern fauna

16. Parapholas Culifornica, Conr. Hanl. suct. = P. Janellii, Desh. Very large; with layers of thin, short cups.

#### Family Saxicavida.

17. Saxicava pholadis, Linn. auct. + var. arctica, Linn. auct. Mas. Cat. no. 23+var. gastrochænoidea, ovoid and gaping like Maz. Cat. no. 21+var. legumen, Desh., elongate, cylindrical, scarcely gaping.

18. Glycimeris generosa, Gld. E.E. Perhaps — Panopea Faujasii, S. Wood, Crag

Moll.: pipes like Saxicava.

# Family Myada.

19. Mya truncata, Linn. anct. = M. præcisa, Gld. Atlantic: circumpolar.

20. Platyodon cancellatus, Conr. Hanl. Pipe-ends 4-valved. Low water: common.

Sold in S. Francisco market, Cp.

21. Cryptomya Californica, Conr. Outside like young Mya; mantle-bend nearly obsolete.

#### Subfamily Latrarina.

22. Schizothærus Nuttalli, Conr. + Tresus maximus, Midd. Gray = L. capax, Gld. Shape from ovoid to elongate; very large and tumid; beaks swollen; hinge-sides channeled; mantle-bend joined to ventral line.

23. Darina declivis, n. s. Outside like Machera. Cartilage-pits produced, gaping.

#### Family Corbulida.

24. Corbula luteola, n. s. Shape of young biradiata; small, ashy yellow. Com. Cp.

25. Sphania ovoidea, n. s. Siphonal area small; front excurved; mantle-bend large. 26. Neara pectinata, n. s. Principal ribs about 12; beak smooth. Like sukata.

40-60 fm. Cp.

	Nuce	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swar.	Cooper.
27. Clidiophora punctata	В			_		_	v	D
28. Kennerlia filosa		l — '	l — I	l —	P	<b>—</b>	_	
29. — bicarinata	<b>!</b> —	<b> </b>	l — i	_		l — 1	_	I
30. Periploma argentaria		_	_	_	_	_	l — I	I D
31. Thracia curta	В	_	_		P	-	v	_
32. Lyonsia Californica	В	В	PC	<u></u>	P	_	v	MD
33. — Entodesma saxicola				I	_	v	l v l	
34. — inflata		l — I	L			_	-1	D
35. Mytilimeria Nuttalli		_	_	D	P	_	$ \mathbf{v} $	
36. Plectodon scaber	_		_	1 _ [	_	_	l <u> </u>	Ī
37. Solen sicarius		_	P	P	P	_	$ \mathbf{v} $	_
37 b.—— v. rosaceus		В		_	_	_	_	D
38. Solecurtus Californianus		$\tilde{\mathbf{B}}$	C	_	_			Ď
39. —— subteres	1 - 1	$\ddot{\mathbf{B}}$	č			_		$\tilde{\mathbf{D}}$
40. Machæra patula		F	oc	VOF	_		$\overline{\mathbf{v}}$	Ď
41. Sanguinolaria Nuttalli	D	_	č	L	_	_	انا	ĎΙ
42. Psammobia rubroradiata	ď	_	_		P		v	D

### Family Pandoridæ.

- 27. Clidiophora punctata, n. g. (Type of genus=Pandora claviculata, P. Z. S. 1855, Chatophora pinetaua, n. g. (1) pe of genus = Paratora curvetuata, 1. 2. 5. 1003, p. 228.) Teeth \$\frac{1}{2}\$, posterior long, with ossicle. Conr. sp.; like \$Cl. trilineata, but teeth more divergent; inside strongly punctate.
   Kennerlia filosa, n. s. New subgenus of Pandora with ossicle: outer layer radiately grooved. Shell beaked.
   Kennerlia bicarinata, n. s. Not beaked; 2 post. keels in convex valve. 40-60
- fm. r. Cp. May prove=P. bilirata, Conr.

### Family Anatinida.

- 30. Periploma argentaria, Conr. Hanl. Large, subquadrate. 31. Turucia curta, Conr. Hanl. Strong, subovate.
- 32. Lyonsia Californica, Conr. Hanl. + bracteata + nitida, Gld. Outline variable: often
- close to Atlantic L. Floridana: striated external layer fugacious.

  33. Entodesma saxicola, Baird. Subgenus of Lyonsia: animal nestling, irregular. Close to E. cumenta, Ad. & Rve. Form protean: brittle, thick, lurid, with enormous ossicle. Var. cylindracea has the form of Saxioava pholadis.

  34. Entodesma inflata, Conr. = diaphana, Cpr. P. Z. S. 1855, p. 228. From Southern
- fauna. Like picta, but pale, without pinch.

  35. Mytilimeria Nuttalli, Conr. Hanl. ? Subgenus of Lyonsa: rounded, with spiral umbos.
- 36. Pectodon scaber, n. g., n. s. Shape of Theora: dorsal margins twisted-in spirally inside umbos. Lateral teeth laminated, with internal cartilage hidden; appressed. 2 r. valves, 40-60 fm. Cp.

#### Family Solenide.

- 37. Solen sicarius, Gld. Otia. Nearly straight, rather short, truncated.
- 37b. Solen ? var. rosaceus. Straight, narrower, longer, smaller; glossy, rosy.

#### Family Solecurtide.

- 38. Solecurtus Californianus, Conr. Hanl. May be a var. of the Peruvian ? Dombeyi. Yellowish ash, with ventral parallel grooves. A ?var. without grooves closely
- resembles gibbus.

  39. Solecurtus subteres, Conr. Hanl. Small, compact, with violet rays.

  40. Machæra patula, Dixon=S. maximus, Wood=grandis, Gmel.=Siliqua Nuttalli ? + lucida, Conr. (var. jun.) Asia.

# Family Tellinidæ.

- 41. Sunminolaria Nuttalli, Conr. Hanl. = Psammobia decora, His. Flat, rounded.
- 42. Psammobia rubro-radiata, Nutt. Large: shape of resperting: rayed with lilac.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
43. Macoma secta	D	D	C	MIL	_			D
43 b.— v. edulis	0		_	PO	P	_		
44. — indentata	_	_	_	-	_	<b> </b> —		D
45. — voldiformis		_	_		P	-	V	D
46. — nasuta	OD	D	OC	VPOF	$\mathbf{P}$	v	V	MD
47. —— inquinata		_	0	0	P	_	V	$\mathbf{F}$
47 b.—— P edentula		_	_			-	V	_
48. — v. expansa	_	_	_		P P P	_	—	
48. — v. expansa	0	_	_	OF	P	v	V	FM
50. Angulus modestus 50b.—— obtusus	-	_	I — I	_	P	_		
50b.—— -— obtusus	-	_	- 1	D	P	_	V	D
51. — variegatus	<b> </b> —	_	I — I		_	_	V	MI
52. —— Gouldii	_	_	_	DL	-	_	<b>—</b>	D
53. — Mæra salmones	l —	_	_	F	_		V	M
54. Tellina Bodegensis		_	OF	F O	_	-	$ \mathbf{v} $	D D
55. — Arcopagia lamellata	<b> </b> —	-	-		_		—	D
56. Œdalia subdiaphana	_	_		D		<b> </b> —		_
57. Cooperella scintillæformis.			_	1 —	_	_		DI
58. Lutricola alba	В	В	C	-	-		-	$\mathbf{DI}$

- 43. Macoma secta, Conr. Hanl. Large, flat, rounded, glossy; winged behind ligament. 43 b. Macoma var. edulis, Nutt. Northern form, less transverse; texture dull.
- 44. Macoma indentata, n. s. Like secta, jun., but beaked, indented, and ventrally produced.
- 45. Macoma yoldiformis, n. s. Small, white, glossy, very transverse; ligament-area scooped-out.
- Macoma nasuta, Conr. auct. + tersa, Gld. Large, beaked, twisted; mantle-bend touching opposite scar in one valve. From Kamtschatks to S. Diego. Cape Lady Franklin, 76°, Belcher, 1826.
   3 ft., mud, between tide-marks, Lord.
- Macoma inquinata, Desh. P. Z. S. 1854, p. 357. Like degraded nasuta; mantle-bend a little separated from scar in both valves.
   Macoma fedentula, Brod. & Sby. jun.; or an abnormal var. of inquinata.
- Macoma Pvar. exponsa. Scars like lata and calcarea in Mus. Cum., but teeth
  not bifid, very thin, glossy. Scarcely differs from lata, Desh. in B. M.
  Greenland.
- 49. Macoma inconspicua, Br. & Sby. = Sang. Californiana, Conr. Probably = "Fabricii = fragilis, Fabr." in Mus. Cum. Like thin, flat solidula: pink; var. large, white. 8-15 fm. Lyall.
   50. Angulus modestus, n. s. (Subg. of Tellina.)
   Like tener, Say; but with callus thereon manufacture with the control of the cont
- between mantle-bend and scar. White.
- 57 b. Angulus ?var. obtusus. Inside like modestus; but beaks obtuse.
- 51b. Angulus rvar. occurus. Insue in mousesme, but becaus social states of solutions.

  51. Angulus variegatus, n. s. Shape of obtusus: no callus; rayed with pink and yellow. 20-60 fm. r. Cp.

  52. Angulus Gouldii, Hanl. MS. in Mus. Cum. Small, white; ant. ventr. side swollen.
- Mæra salmonea, n.s. (Scarcely differs from Angulus.) Small, subquadrate, glossy, salmon-tinted. Beach-20 fm. Cp.
   Tellina Bodegensis, Hinds, Voy. Sulph. Large, strong, transverse, with con-
- centric grooves.
- Arcopagia lamellata, Mas. Cat. no. 58. One fine pair in shell washings.
   Edalia subdiaphana, n. g., n. s. Thin, swollen, shape of Kellia, ligament surrounding beaks: hinge with 5 bifid teeth (3-2); no laterals; large mantlebend.
- 57. Cooperella scintilla formis, n. s. New subgenus of Œdalia. Cartilage semiinternal: only I tooth bifid.
- dricola alta, Conr. (Tellina). For this group (= Capsa, "Bosc," Add. non Lam.), scarcely agreeing with either Macoma or Scrobicularia, Blainville's 58. Lidricola alta, Conr. (Tellina).

	Nutt.	Jow.	B. A.	Smiths. Inc.	Ken.	Lord. Swan	Cooper.
59. Semele decisa	D	D	C	_	_		D
60. — rupium	_	_	_				I
60. — rupium	D	D	-			_ V	l —
62. — pulchra		_	_	D	_	_   _	D
63. — incongrus			_	_ ]	_	_   _	I
64. Cumingia Čalifornica	В	_			_	_   _	DI
6. Donax Californicus	В	D	C	DL DL	-	_   _	D
66. — flexuosus		В	-		-		
67. — navicula		-	_	D L F	_	_   _	D
68. Heterodonax bimaculatus	D	-	<u> </u>	L	_	—   —	D
69. Standella Californica	В	В	-	F	_	Wfr.	D D
69 <i>b.</i> nasuta	—	-	C			_   -	PD
70. — planulata	В	_	-		_	_   _	D
71. — falcata		-	P	-	P	_ V	
72. Raëta undulata		_	L		_	_   _	D
73. Clementia subdiaphana	-	_			P	v	
74. Amiantis callosa	В	В	C	L	_		D D I
75. Pachydesma crassatelloides		В	C	FM	_	- $Vfr$ .	D
76. Psephis tantilla	-	В	-	0	P	v   ˈv ˈ	I.

synonymic name may be revived in restricted sense. Species = biangulata, P. Z. S. 1855, p. 230.

- 59. Semele decisa, Conr. auct. Large, rough, like Peruvian corrugata, but truncated.
- 60. Semele rupium, Sby. Smaller, rough, swollen; with smaller mantle-bend. Galapagos. Not r. Cp.
   61. Semele rubrotineata, (? Conr.). Flattened, same shape, with faint sculpture each
- way, and pink rays. [Conrad's lost shell may be young decisa.]

  62. Semele pulchra, Sby. Transverse, crowded concentric sculpture, with radiating lines at sides. Southern fauna.
- 63. Semels incongrua, n. s. Like pulchra, with concentric sculpture differing in r. and l. valves: fine radiating striæ all over. 40-60 fm. c. Cp.
- 64. Cumingia Californica, Conr. auct. Maz. Cat. no. 44. 65. Donax Californicus, Conr. (non Desh.) = obesus, Gld. (non Desh.). Smooth, stumpy: outline and colour variable.
- 66. Donax Hexuosus, Gld. Like punctostriata jun. with stronger keel, and no punctures.
- 67. Donax navicula, Sby. Maz. Cat. no. 77. From Southern fauna.
  68. Heterodonax bimaculatus. Broad var., generally violet, = Psammobia Pacifica, Conr. = Tellina vicina, C. B. Ad. Cape St. Lucas, Acapulco, W. Indies.

# Family Mactrida.

- 69. Standella Californica, Conr. (non Desh.). Large, shaped like Schiz. Nuttalli, but beaks narrow. Mantle-bend separate from ventral line.
- 69 b. Standella? var. nasata, Gld. (suppressed). Revived for young shells between

- Californica and planulata, till more is known.

  70. Standella planulata, Conr. Nearly as large; shape approaching Mactrella exoleta.

  71. Standella falcata, Gld. Otia. Shape like planulata, but flatter.

  72. Raëta undulata, Gld. Otia. Like the Atlantic R. canaliculata, but reversed. Rare at S. Pedro, Cp.

#### Family Veneride.

- ? Clementia subdiaphana, n. s. Hinge normal, very thin, sahy.
   Amiantis callosa, Conr. (not auct.). Subgenus of Callista: hinge-plate roughened as in Mercenaria: mantle-bend as in Dosinia. L. w. com. Cp.
- 75. Pachydesma crassatelloides, Conr. suct. Subgenus of Trigona, with fewer teeth:
- jun. = stultorum, Gray.
  76. Psephis tantilla, Gld. Otis. Subgenus of Venus: animal ovoviviparous. Teeth elongate, approaching Pachydesma. Small, with purple spot. 12-20 fm. c. Cp.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
77. Psephis Lordi 78. —— salmonea 79. —— tellimyalis 80. Venus Kennerleyi 81. Chione succincta				_	P	v	$ \mathbf{v} $	I
78. — salmonea	l — 1		_	_	_	_		DI
79. — tellimyalis	_	-	_	н	_	_	l — I	
80. Venus Kennerleyi	<b> </b> —	_	_	_	P	_	v	<del>_</del> D
81. Chione succincta	BD	D	C		_	_	—	$\mathbf{D}$
82. —— excavata	ע ן	l — ,	_		_	_		D D D
83. —— simillima		D D B	COF	L	_			D
84. — fluctifraga	D	D	C	D	-	_		$\mathbf{D}$
85. Tapes tenerrima	—	В	F	F		_	$ \overline{\mathbf{v}} $	D
86. — laciniata		-	M		-	- - v		
87. — staminea		F	F	FD	_	_		FD
87 & var. Petitii		_	C	VPOM	P	V	v	FM
87 c. —— var. ruderata		-	_	l — 1	_	-	V	_
88. Saxidomus aratus	_	_	-	F	_	—	l — I	FD
88. Saxidomus aratus 89. — Nuttallii	D	$\overline{\mathbf{D}}$	<u>c</u>		_ P	-	l — I	$\mathbf{FD}$
90. —— squalidus	<b>—</b> 1	F	Ō	VPOF	P	v	v	_
91. — brevisiphonatus		_	_		_	V		_
92. Rupellaria lamellifera	D	M	C	D	_		—	M
93. Petricola carditoides	BD	MB	C	D F	P	_	$ \mathbf{v} $	M
94. Chama exogyra	BD.	-	C	LH		<b>—</b>		D
95. — pellucida	В	В	C	MD	-	—	-	FMD

- 77. Psephis Lordi, Baird, P. Z. S. 1863. Teeth normal: pure white. 20-40 fm. c. Cp. 78. Psephis salmonea, n. s. 30-40 fm. r. Cp. Very small, rounded, teeth elongate: salmon-coloured.
- 79. Psephis tellimyalis, n. s. Shape of Tellimya: central tooth minute; outside teeth long.
- Venus Kennerleyi, Rve. Large, transverse, flattened, ashy: strong conc. ribs.
   Young like astartea, Midd. (not fluctuata, Gld.).
   Chione succincta, Val. = Californiensis, Brod. = Nuttalli, Conr. Conc. ribs smooth.
   Chione excavata, Cpr. P. Z. S. 1856, p. 216. Scarcely differs from cancellata.
- Possibly exotic.

- Chione simillima, Sby. Finely sculptured each way.
   Chione fluctifraga, Sby. + callosa, Sby. Like Statchburyi: swollen, irregular.
   Tapes tenerrima, Cpr. P. Z. S. 1856, p. 200, (jun.) = V. rigida, Gld. pars, f. 538.
   Very large, thin, flat; long pointed sinus.
   Tapes laciniata, n. s. Large, swollen, brittle, ashen; sculpture pectinated.
   Tapes staminea, Conr. Strong, shape of decussata; sculpture close; yellowish. Var. diversa, Sby. = mundulus, Rve. More swollen, clouded with chocolate.
   Var. Pritti Desh = rigida (3)d pars. Dead white sculpture strong or faint. Var. Petitii, Desh. = rigida, Gld. pars. Dead white, sculpture strong or faint, open or close. 2 ft. deep in mud, between tides, Lord. Var. tumida, Sby. Very swollen. Var. orbella, rounded, globose. Var. ruderata, Desh. Concentric sculpture laminated.
- 88. Saxidomus aratus, Gld. Otia. Very large, oval, with regular concentric ridges.
  89. Saxidomus Nuttallii, Conr. auct. Transverse, subquadrate, irregularly grooved.
- 90. Saxidomus squalidus, Desh. Large, variable outline, broader, scarcely sculptured.
- 91. Saxidomus bremisiphonatus, n. s. Smaller, Callista-shaped; close, faint concentric lines over distant waves; mantle-bend very small.
- Family Petricolidæ. 92. Rupellaria lamellifera, Conr. = Cordieri, Desh. With large concentric lamino. No radiations
- 93. Petricola carditoides, Conr. + Californica, Conr. + cylindracea, Desh. + arcuata, Desh. + gibba, Midd. Of various aspects, like Saricava. Normally shaped like Cypricardia, with fine sculpture like Naranio.
  - Family Chamidæ.
- Chama exogyra, Conr. Reversed; texture opaque; rudely frilled.
   Chama pellucida, Sby. Dextral, texture porcellanous, rosy; closely frilled. S.A. 1863.

183. Chama spinosa	OB —	1111	OC P	VPOF D 	- P -	$\frac{\overline{\mathbf{v}}}{\mathbf{v}}$	$\left  \frac{\overline{\mathbf{v}}}{\mathbf{v}} \right $	PD F D
18. — quadragenarium 99. — var. blandum 100. — var. centifilosum 101. Hemicardium biangulatum 102. Serripes Grænlandicus 103. Liocardium elatum 104. — substrictum	   R	1111	_ P	<u>D</u>	<u>P</u>		1 ' 1	F D
18. — quadragenarium 99. — var. blandum 100. — var. centifilosum 101. Hemicardium biangulatum 102. Serripes Grænlandicus 103. Liocardium elatum 104. — substrictum	   R	1111	-	<u>D</u>	_	<u>v</u>	$ \overline{\mathbf{v}} $	D
01. Hemicardium biangulatum 02. Serripes Grænlandicus 03. Liocardium elatum	_	_	-	_	_	<u>v</u>	V	
01. Hemicardium biangulatum 02. Serripes Grænlandicus 03. Liocardium elatum	_	_	_	_	-	_		
Ind enhetrictum	_	_	-				I — I	I
Ind enhetrictum	_			1 1			l — I	I
Ind enhetrictum	_		_	-	P	_		
04.	_	-	  -   0	-				D D
06. Astarte compacta	D	_	C	_	_		—	D
106. — Esquimalti		-	-	_	P	=		_
107. — fluctuata	_	-	-	_		v	—	Ī
	_	-	_	-	_	_	$ \bar{\mathbf{v}} $	1
100. Miodon prolongatus	_	-	_	_	-	$\overline{\mathbf{v}}$		РC
109 b. —— var. ventricosa	_	-	$\overline{\mathbf{P}}$	_	_	V	-	1
var. ventricosa	_	B 18.	P	T	P		$ \overline{\mathbf{v}} $	MDI
110. Lazaria subquadrata	_	В	-		_	-	•	WIN
		<u>-</u> В	_	D	_	-	-	Ţ
112. —— Californica	Ä	ם		ן ע	_	—	-	ı
113. — bella	ע	-			P	-		DI

- 96. Chama spinosa, Sby. Ridges broken into close short spines. Maz. Cat. no. 122. Family Cardiadæ.
- 97. Cardium corbis, Mart. = Nuttalli + Californianum, Conr. Large, earthen, rather nodulous; posterior margin strongly indented by 2 first ribs. Asia. 8-15 fm. Lyall. Jun. in stomach of starfish, 12 fm. Lord.

98. Cardium quadragenarium, Conr. = luleolabrum (=xanthocheilum), Gld. Very large; 40 ribs, with aculeate spines.

- 99. Cardium var. blandum, Gld. Otia. Delicate form of the Asiatic pseudofossile, Rve. = Californiense, Desh. Transverse; close, flat ribe; margin regular. 8-15 fm. *Lyall*.
- Cardium var. centifilosum. Probably=modestum, Ad. & Rve.; but rounder, ribs sharper and more distant. Belongs to subg. Fulvia, Grav. 30-40 fm. Cp.
- 101. Hemicardium biangulatum, Sby. Southern fauna. 10-20 fm. living. Cp. 102. Serripes Granlandicus, Chem. auct. Boreal. Rounder than S. Laperousii. 103. Liocardium elatum, Sby. Maz. Cat. no. 124. Gulf fauna. Very large, Cp.
- 104. Liocardium substriatum, Conr. = cruentatum, Gld. Almost identical with the Peruvian Elenense.

### Family Astartidæ.

- 105. Astarte compacta, n. s. Like compressa, but closer; dorsal margins straight, at right angles.
- Astarte Esquimalti, Baird, P.Z.S. 1863, p. 70. Subtrigonal; ribs irregular.
- 107. l'Astarte fluctuata, n. s. Very close to Omalii, jun. of Coralline Crag. 2 right v. 30-40 fm. Cp.
- 108. Miodon prolongatus, n. g., n. s. Outside Lucinoid; hinge and scars nearer to Venericardia. Congeneric with A tarte orbicularis, J. Sby. Min. Conch. pl. 444.

- f. 2, 3 (non ejusdem, pl. 520. f. 2). G. Oolite; and with the Crag Cardita corbis.

  109. Venericardia borealis, Conr. N. Atlantic, from Miocene. 120 fm. Cat. Is. Cp.
  109 b. Venericardia var. ventricosa, Gld. Small, swollen. 30-40 fm. Cp.
  110. Lazaria subquadrata, n. s. Hinge of Lazaria: outside like Cardita variegata, jun. Family Lucinidæ.
- 111. Lucina Nuttallii, Conr. Hanl. Like muricata, with more delicate sculpture.
- 112. Lucina Californica, Conr. Dosinoid, with waved lunule. Jun.? = L. Artemidis,
- P. Z. S. 1856, p. 201.

  113. Lucina bella, Conr. Shell not known; may be =pectinata, Maz. Cat. no. 142.

  114. Lucina tenuisculpta. n. s. Like Mazatlunica, Cat. no. 144, more convex. with finer sculpture. 4 fm. living, Cp. The island var. is intermediate. 120 fm. dead, Cp. 128

115. Lucina borealis			ı		Smithe. Inc.	Ken.	Lord.	Swan.	Cooper.
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	115. Lucina borealis	_	_		_		_		I
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	116. Cryptodon flexuosus	<u>   </u>	_	_	-	_		_	I
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	117. — serricatus		_			P	V		19
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	118. Diplodonta orbella	В	В	C	D	_	_	v	
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	119. Kellia Laperousii	I — I	_	C	M	P	_	l v l	_
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	119 b. — var. Chironii	_	_	_		_		v	D
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	120. — rotundata	l — I	_	_ !	M		-	_	_
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	121. — suborbicularis	i I	_	<u> </u>	H	P	_		DI
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	122. Lasea rubra	l — I	_			P		_	I
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	123. Pythina rugifera	-		- 1	_	P	-		_
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	124. Lepton meroëum		-	_			-		D
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	125. Tellimya tumida		_	- 1	_	P	_	v	$\overline{\mathbf{D}}$
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	126. Pristes oblongus	<del></del>	_		_	_		l i	D
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	127. Mytilus Californianus	MD	C	C	PFC	P	V	$ \mathbf{v} $	
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	128. —— edulis	C	C	C	PC	P	V.	v	
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	128 b. —— var. glomeratus	_	_	F		_	_		
130. Modiola capax   B   C   C     -   -   -   D     131 modiolus     M   P   VH   P   V   V   M	129. Septifer bifurcatus	PC	_	F	FH		_		DI
131. — modiolus —   M   P   VH   P   V   V   M	130. Modiola capax	В	C	C	-	_	_		D
	131 modiolus	!	M	P	VH	P	V	$\mathbf{v}$	M
132. — fornicata   —   B   —   M   —   —   —	132. —— fornicata	_	В	_	M	_	_	<del></del>	
133. — recta B B C — — D	133. — recta	В	В	C	_	_	_	_	D

- 115. Lucina borealis, Linn. auct. + acutilineata, Conr. Widely diffused, from Coral-
- line Crag. Philippines, teste Cuming. 30–120 fm. Cp.

  116. Cryptodon fexuosus, Mont. auct. Atlantic, circumpolar. Cat. Is. 120 fm. Cp.

  117. Cryptodon serricatus, n. s. Small, circular, flat; epidermis silken. ? Cat. Is.

Cp. 120 fm.

## Family Diplodontidæ.

118. Diplodonta orbella, Gld. Otia. = (Mysia) Sphærella tumida, Conr.

## Family Kelliadæ.

- 119. Kellia Laperousii, Desh. Woodw. Typically large, strong, transverse.
  119 b. Kellia var. Chironii. Thinner, less transverse, margins rounded.
  120. Kellia rotundata, n. s. Larger, flatter, and less pearly than suborbicularis. Margin circular.
- 121. Kellia suborbicularis, Mont. auct. Maz. Cat. no. 153. N. Atlantic: W. Mexico. Exactly accords with British sp. 30-40 fm. Cp.
- 122. Lasea rubra, Mont. auct. Maz. Cat. no. 154. N. Atlantic: W. Mexico. Exactly
- accords with British sp.

  123. Pythin: rugifera, n. s. Large, thin, slightly indented; teeth minute; epidermis shaggy.
- 124. Lepton meroëum, n. s. Small, shaped like Sunapta.
  125. Tellimya tumida, n. s. Between bidentata and substriata: ossicle minute.
- 126. Pristes oblongus, n. g., n. s. Like Tellimya, with long marginal teeth, serrated near hinge.

## Family Mytikdæ.

- 127. Mytilus Californianus, Conr. 9 in. long: stained with sienna: obsoletely ribbed.

  128. Mytilus edulis, Linn. auct. = trossulus, Gld. Abundant on whole coast, with the usual Atlantic vars. Between tide-marks, Lord: also brown var. on floating stick.
- 128 b. Mytilus? var. glomeratus, Gld. Otia. Short, stumpy, solid, crowded

- 129. Septifer bifurcatus, Rve. Outside like Mytilus b. Conr. from Sandw. Is.
  130. Modiola capax, Conr. Maz. Cat. no. 170. From Southern fauna.
  131. Modiola modiolus, Linn. auct. Circumboreal. 8-15 fm. jun. Lyall.
  132. Modiola fornicata, n. s. Short, swollen, like large M. marmorata; but smooth, not crenated.
- 133. Modiola recta, Conr. 6 in. long, thin, narrow, rhomboidal. Chaff-like hairs over glossy epidermis.

•	Nutt.	Jew.	B. A.	Smiths. In .	Ken.	Lord.	Swan	Cooper.
133 b. Modiola var. flabellata	_	_	v	VP	P		v	
134. Adula falcata	-	M	M	FM		_		D
135. —— stylina		-	_	OFM		-	v	
136. Lithophagus plumula	_	_		M	-	_		D
137. — attenuatus	_	_	L	H		_	l	
138. Modiolaria lævigata l			-		P	V	v	
139. — marmorata			P	_	P	_	l — J	Ī
140. Crenella decussata	_					-		I
141. Arca multicostata	_	_		D	-			
142. Barbatia gradata	_	_	-		<b> </b> —			D
144 A vince intermedia		· —			-	_	- 1	MDI
144. — var. subobsoleta	_	_	_	ODI		_	v	
145. Nucula tenuis	_	_	_		P	-		_
146. — Acila castrensis		I		- 1	P	V		I
147. Leda cælata		В	F	_	_	_	l i	MD
148. —— cuneata			_		_	_	_	MDI
149. — minuta	_	_	_		P		l — I	
150. —— fossa.		_	_	I —	P	v	l	_
151. — hamata		_	-	_	_	_		BI

133 b. Modiola ver. flabellata, Gld. Northern form, somewhat broader.
134. Adula falcata, Gld. Otia. Subgenus enlarged to include species intermediate between Modiola and Lithophagus: shape of latter, byssiferous like former, nestling in crypts. Sp.=Gruneri, Phil. MS. Shape not always falcate: chestnut, rugose.

- Adula stylina, n. s. Shorter, broader; epidermis brown, glossy.
   Lithophagus plumula, Hanl. Maz. Cat. no. 175. From Southern fauna.
   Lithophagus attenuatus, Desh. Maz. Cat. no. 173. From Southern fauna.
- 138. Modiclaria levigata, Gray. Exactly accords with Atlantic specimens. Cir-
- cumboreal. 139. Modiolaria marmorata, Fbs. & Hanl. Exactly accords with Atlantic speci-
- mens. Circumboreal. 140. Crenella decussata, Mont. Exactly accords with Atlantic specimens. Circumboreal. 10-40 fm. not r. Cp.

#### Family Arcade.

- 141. Arca multicostata, Sby. Maz. Cat. no. 181. From Southern fauna. 142. Barbatia gradata, Sby. Maz. Cat. no. 194. From Southern fauna.
- 143. Axinea intermedia, Brod. = Barbarensis, Conr. fossil. Closely accords with the Peruvian specimens. 40-60 fm. Cp.
- 144. Axinæa (? septentrionalis, Midd. var.) subobsoleta. Sculpture much fainter than in Midd.'s fig.

# Family Nuculida.

- 145. Nucula tenuis, Mont. auct. Agrees with var. lucida, Gld. Circumboreal.
- 146. Acila castrensis, Hds. Sulph. + Lyalli, Baird. Subg. of Nucula with divariate ace sculpture; only known in Crag and N. Pacific. 40-60 fm. Cp.

  147. Loda calata, Hds. Sulph. Swollen, strongly sculptured: teeth very numerous.
- 10-60 fm. Cp.
- 148. Leda cumeata, Sby. D'Orb. teste Hanl. (Scarcely differs from commutata, Phil. in Mus. Cum.) = inornata, A. Ad. Chili. 0-60 fm. Cp.
- 149. Leda minuta, O. Fabr. teste Hanl. Circumboreal. Agrees with Norwegian
- specimens of "caudata, Don." teste M'Andr.
  150. Leda fossa, Baird, P. Z. S. 1863, p. 71. Between minuta and pernula. Sculpture nearly obsolete.
- 151. Leda hamata, n. s. Like Steenstrupi and pernuloides, but very hooked, sculpture strong. 20-60 fm. c. Cp.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
152. Yoldia lanceolata	_	_		_	P	_		
153. — amvgdala	_		_		P	<b> </b> —	1 [	
154. Verticordia ornata			_	l —	_	_		BI
155. Bryophila setosa		_	_	H	-	_	l — I	PC
156, Lima orientalia		l —	_		_	_	_	MDI
157. Limatula subauriculata		-	-					DI
158. Pecten hastatus		В	P		P	v	$ \mathbf{v} $	M
159. — Pvar. Hindsii		_	P		P	V	v.	
160. — var. æquisulcatus		В	_	D	_		1 — 1	$\mathbf{BD}$
161. — paucicostatus		B	_		_	_		Ī
162. — Poar. latiauritus		Ī	C	Ð	_	_	l — I	$ar{\mathbf{D}}$
1626.— monotimeris		D	Č	DL	_	_	l — I	D
163. Amusium caurinum				vo	P		$ \mathbf{v} $	_
164. Janira dentata		-	_	-	_	_	انا	MD
165. Hinnites giganteus	C	c	c	PM	P P	v	v	
168. Ostrea lurida	_	_		VPO	$\hat{\mathbf{p}}$	v	ΙὐΙ	D F

- 152. Yoldia lanceolata, J. Sby. Hanl. = arctica, Brod. & Sby. (Not Adrana l., Lam.
- G. Sby.) With ant. diagonal lines.

  153. Yoldia amygdala, var. teste Hanl. Like lanceolata, without posterior wing, and anterior sculpture.

# Family ? Trigoniada.

154. Verticordia ornata, D'Orb. = novemcostata, Ad. & Rve. Samarang. Exactly accords with Chinese types. S. A. 20-40 fm. Cp.

#### Family Aviculida.

155. Bryophila setosa, n. g., n. s., Ann. N. H. 1864, p. 10. Like minute, broad Pinna. Animal ovoviviparous. Sta Barbara, 20 fm. Cp.

#### Family Peotinida.

156. Lima orientalis, Ad. & Rve., Samarang, in Mus. Cum. = dehiscens, Conr. fossil, teste Cp. Very close to young of L. hans, var. tenera. Beach to 20 fm. c. Cp. 157. Limatula subauriculata, Mont. Fbs. & Hanl. Circumboreal. Fossil in Crag.

- Islands, 40-120 fm. not r.; S. Diego, 1 valve, 4 fm. Cp.

  158. Pecten hastatus, Sby. = hericous, Gld. Elongated; a few principal ribs serrated; ears unequal. In var. rubidus, Hds. (non Mart.), the ribs are equal, not serrated.
- 159. Pecten (? var.) Hindeii. Broader; ribs close, small, smooth, bifurcating. Passes from hastatus towards Islandicus.
- 160. Pecten aquisulcatus, ? n. s. Thinner and flatter than ventricosus, with narrower ribe.
- 161. Pecten paucicostatus, ? n. s. Somewhat resembling very young courinus; but ribs fewer, stronger.
- 162. Pecten laticuritus, Conr. (pars). Ribs sharply defined, with sharp concentric laminss. Possibly an extreme form of 162 b. Pecten monotimeris, Conr. = tunica, Phil. + laticuritus, Conr. pars. Passes into
- Amusium. Very slanting, thin, with faint ribs.

  163. Amusium caurinum, Gld. E. E. Large, flat, thin, very inequivalve. Var. =
- Yessoensis, Jay. Japan.
  164. Jamira dentata, Sby. = excavata, Val. Ven. Like media. From the Gulf fauna. Beach-20 fm. Cp.

## Family Spondylidæ.

.65. Hinniles giganteus, Gray, Analyst. = Poulsoni, Conr. Very large, Spondyloid: ligament as in Pedum, strongly adherent along the ears.

#### Family Ostreidæ.

66. Ostrea larida, n. s. Shape of edulis: texture dull, lurid, olivaceous, with purple stains. 2-3 fm. on mud flats, Lord.

_				
				F
D	_	]		D
_		_		D
L		_	ı — I	D
VF	P	V	V	F
L		_	—	D
-	- 1	V		I
DL	<u> I</u>	_	ı — I	DI
$\mathbf{L}$	-		—	$\mathbf{D}$
PP	P	V		- 1
-	-	-	—	D
D	— I	- 1	i — I	BD
-		_	ı — I	
-	P	_ [	i — I	
I			<b>-</b>	D
-	-		-	MI
	L VF L DL	L - DL - PP P	L - V L - V DL - V DL V DL C PP P V	L

166b. Ostrea var. laticaudata, Nutt. MS. Purple, winged, waved: denticles near hinge. Passes towards palmula, Maz. Cat. no. 214, b.
166c. Ostrea? var. rufoides=rufa, Gld. (non Lam.). Passing towards Virginica, jun.

Thin, with umbos hollowed; reddish in scar-region. Also fossil.

166 d. Ostrea ? var. expansa. Flat, affixed to whole surface, like Columbiensis.
Round, or winged to left, or right, or both, like Malleus. Also passes into
167. Ostrea conchaphila, Cpr. Maz. Cat. no. 214. From Southern fauna.

#### Family Anomiada.

168. Placunanomia macroschisma, Desh. Kamtschatka. Vara = alope+cepio, Gray. Shape most variable, according to station. Sculpture often obsolete. On rock, between tides, *Lord*.

169. Anomia lampe, Gray, Maz. Cat. no. 219. From Southern fauna.

#### Class PTEROPODA. Family Hyalæidæ.

170. Cavolina telemus, Linn. = Hyalaa tridentata, Forsk. non Lam. Pelagic. 30-60 [Other Pteropods were brought by the Brit. N. P. Boundary Survey, but may

have been collected on the voyage: v. p. 607.]

#### Class GASTEROPODA.

#### Subclass Opisthobranchiata. Order TECTIBRANCHIATA.

#### Family Bullidæ.

171. Bulla nebulosa, Gld. Otia. Large, globular, thin. Maz. Cat. no. 225+var. fulminosa, Cp. 172. Bulla Quoyi, Gray.

172. Bulla Quoyi, Gray. Small: angular at umbilicus. Maz. Cat. no. 226. Pacific. 173. Haminea hydatis, Linn. auct. Exactly accords with European specimens. 174. Haminea vesicula, Gld. Otia. Smaller, paler, and thinner. 175. Haminea virescens, Sby. Gen. Var. = cymbiformis, Maz. Cat. no. 229.

#### Family ? Philinidæ.

Two species not yet dissected: one with internal shell like Phanerophthalmus.

#### Family Tornatellidæ.

176. Tornatella practocælata, n. s. Small: grooved with rows of dots: pillar twisted as in Bullina, Add. non Gray.

## Family Cylichnida.

177. Tornatina culcitella, Gld. Otis. Large, brownish, with faint striæ. Fold close to paries.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
177b. Tornatina cerealis 178. — eximia 179. — carinata 180. Cylichna? cylindracea 180b. — var. attonsa. 181. — planata 182. — inculta. 183. Volvula cylindrica 184. Neaplysia Californica 185. Navarchus inermis 186. Pleurophyllidea Californic. 187. Doris sanguinea 188. — alabastrina 189. — albopunctata 190. — Sandiegensis 191. — Montereyensis. 192. Triopa Catalinae 193. Tritonia Palmeri 194. Dendronotus iris 195. Æolis Barbarensis 196. Phidiana iodinea 197. Flabellina opalescens 198. Chioræra leonina 199. Melampus olivaceus 200. Pedipea liratus 201. Siphonaria Thersites		В		_			1	ж.
178. — eximia	l —	_	l —	<b> </b> -	P	V		
179. —— carinata	! — !	_	<b> </b>	_	_		i	ับ
180. Cylichna?cylindracea	l —	В	<b>_</b> .			_	i — i	MDI
1806. var. attonsa		_	_		P	_	1=1	
181. — planata	_	_		D	_	_		
182. — inculta	l — I	_	D	$\overline{\mathbf{D}}$		_	1-1	-
183. Volvula cylindrica		В	_	I _	_	_		
184. Neanlysia Californica	l —	_		_		l —	[	D
185. Navarchus inermis		_		_	_	_	l — i	ĎI
186. Pleurophyllidea Californic.	l —	_	l	_			<b> </b> _	D
187. Doris sanguinea	l —	_	<b> </b>	_	_	_	_	ĎΙ
188. — alabastrina		_		_	_	_	1 1	D
180. — albonunctata	'		_	_ '	_	_	1-1	ΒĪ
190. — Sandiegensis	l —	_	_		_		_	DĪ
191. — Monterevensis	l — !	_	_	PP	_	_	l — 1	FMI
192. Triona Catalina	l — I	_	_	_	_	_	l — I	T
193. Tritonia Palmeri	l — l	_	_		_	-	l — I	$\bar{\mathbf{D}}$
194. Dendronotus iris	l				_	_	_	Ŕ
195 Æolis Barbaranuis	l	_			_	_	_	D B B
196. Phidiana iodinea				1111	_			$\widetilde{\mathbf{BD}}$
197. Flabellina onalescena	l	_					l — İ	BDI
198. Chiorgera leonina	<b> </b> _	_	P			_	_	B
199 Melampus olivaceus	_	_	Ĉ.	DL		_	l — I	ĎΙ
200 Pedines livetus	_		_	L		_		D
201 Siphonaria Thereites				1	_	_	v	_
ZOI. Diphonene Incience							1	

- 177b. Tornatina cerealis, Gld. Otia. Small, white, smooth: but probably = worn young culcitella.
- 178. Tornatina eximia, Baird, P. Z. S. 1863, p. 67. Size moderate: fold appressed: subrectangular.
- 179. Tornatina carinata, Maz. Cat. no. 223.
- 180. Cylichna? cylindracea, Linn. auct. Intermediate specimens, passing into
- 180 b. Cylichna var. attonsa, rounded off at apex.

  131. Cylichna planata, n. s. Like mamillata, with apex flattened-off, and fold distinct.

  182. Cylichna inculta, Gld. Otia.
- 133. Volvula cylindrica, n. s. Like grain of rice, pointed at one end.

# Family Aphysiadæ.

- 184. Neaplysia Californica, Cp. Proc. Cal. Ac. 15 inches long.
- 185. Navarchus inermis, Cp. Proc. Cal. Ac. Grasses, on shore, Cp.

# Family Pleurophyllidiadæ.

186. Pleurophyllidea Californica, Cp. Proc. Cal. Ac. Sandy flats, Cp.

# Order NUDIBRANCHIATA.

187-198. All the new Nudibranchs are described in the Proc. Cal. Ac. Vide autal, p. 609. Vide also Gld.'s Otia, and Esch. Zool. Atlas.

# · Subclass Pulmonata.

For land and freshwater species, both of Pulmonates, Rostrifers, and Bivalves, vide posted, paragraphs 115-119.

#### Family Auriculida.

- 199. Melampus olivaceus, Cpr. Maz. Cat. no. 235. 200. Pedipes liratus, Binn. Proc. Ac. N. S. Phil. 1861, p. 333.

#### Family Siphonariade.

201. Siphonaria Thersites, n. s. Like lateralis: with strong lung-rib and obsolete scuipture.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
202. Dentalium v. Indianorum	_	_	P		P		v	MI
203. —— rectius	_	_	l — I		P		I — I	
204. — semipolitum	<b> </b>	_		-	-	_	l — I	$\mathbf{D}$
204. — semipolitum 205. — hexagonum 206. Cryptochiton Stelleri	_	_	<u>-</u>	_	_	_	l — I	D D I I
206. Cryptochiton Stelleri	_	C	00	FMI	P	v	v	I
207. Katherina tunicata	<b> </b>	_	0	OF	P	Ÿ	V	1
208. Tonicia lineata	_	_	0	PFM	P P	V	v	
209. — submarmores	l —	_	_	0			ΙÝΙ	_
210. Mopalia muscosa	M	F	P	OFMI	_	V	v	Ī
211. — Wosnessenskii	_	_	Ō		_	V		
212. — Kennerleyi	_	_	_	_	P	_	l v l	
2126.— var. Swanii	l	_	_	-	_		l v l	
213. — Hindsii	l — I	_		F	P	_	ا <u>ن</u> ا	
214. — Simpsonii	_	_	o	1	_	_	l	_
215. — vespertina	_	_	ř	দ	P	_	v	
216. —— lignosa			РM	F O	P ·	_	١v١	_
217. — acuta				_	ı		انا	_
218. —— sinuata				1 ~ 1	P		I _ I	
219. — imporcata				-	P		I = I	_
Zio. — imporcata	_	_		• —	· •	_	-	_

#### Subclass PROSOBBANCHIATA. Order LATERIBRANCHIATA.

#### Family Dentaliade.

Dentalium (? pretiosum, Nutt. Sby. var.) Indianorum. Like entalis, with very fine posterior strise.
 fine posterior strise.
 fine c. Op.
 Dentalium rectius, n. s. Long, thin, slightly curved: like eburneum, Singapore.

204. Dentalium semipolitum, Br. & Sby. ? = hyalinum, Phil. not Maz. Cat. no. 245. From Southern fauna.

205. Dentalium hexagonum, Sby. From Southern fauna.

#### Order Scutibbanchiata. Family Chitonida.

Cryptochiton Stelleri, Midd. Very large: valves hidden. Reaches Sta Cruz, Cp.
 Katherina tunicata, Sby. = Douglasia, Gray. Mantle smooth, black: valves partly concealed. Between tide-marks, Lord. Reaches Farallone Is. Cp.

- 208. Tonicia lineata, Wood. Closely resembling lineolata, Peru. Painting variable.
  209. Tonicia submarmorea, Midd. Perhaps=lineata, var. without lines.
  210. Mopalia muscosa, Gld. E. E. = C. ornatus, Nutt. (=armatus, Jay) + consimilis,
  Nutt. Highly sculptured: mantle crowded with strong hairs. Between tide-marks, Lord.
- 211. Mopalia Woenessenskii, Midd. Mantle slit behind, with few hairs. Sculpture like muscosa.
- 212. Mopalia Kennerleyi, n. s. = Grayi, anteà, p. 603, nom. preoc. Sculpture fainter: olive with red: ridge angular; post. valve waved.
  212b. Mopalia Kennerleyi, var. Svanii: red, ridge arched; less sculptured.
  213. Mopalia Hindsii, Gray. Olive: distinctly shagreened: flat: post. valve waved.
  214. Mopalia Simpsonii, Gray, in B.M. Col. Like Hindsii, with valves beaked.
  215. Mopalia vepertina, Gld. E. E. Shape of Hindsii, with very faint sculpture and

- slight wave. Olive clouded with brown.
- 216. Mopalia lignosa, Gld. E. E. = Merckii, Midd. = Montereyensis, Cpr. P. Z. S. 1855,
- p. 231. Like vespertina, without wave: brown in streaks.

  217. Mopalia acuta, Cpr. P. Z. S. 1855, p. 232. Subgeneric, aberrant form; with small blunt plate, instead of post. sinus, between the two principal lobes.
- 218. ? Mopalia sinuata, n. s. Small, raised sharp back, red and blue, engine-turned; post. valve deeply notched.
- 219. ? Mopalia imporcata, n. s. Pale: central areas ribbed: post. valve slightly notched. Indications of sutural pores in these two species, if confirmed, will require a new genus.

134

	Nutt	Jow.	B. A.	Smiths. Inc.	Ken.	Lord.	Swap.	Cooper.
220. Acanthopleura scabra	M	_	С	FI	P	1	_	I
221. —— fluxa		-		l — 1	. —	-		I
222. Ischnochiton Magdalensis	_	_	L	LM	-		-	DI
223. — veredentiens	-	-	_	<b> </b>		<b> </b> —	<b>-</b>	I
224. Lepidopleurus regularis	_	_	С	_	_			_
225. — scabricostatus	-	_	-	-	l —	_		I
226. — pectinatus	_		_	li —	<b> </b> —	_		I
227. — Mertensii		ŀ	C	M	P	<b> </b> —	·V	
228. Trachydermon retiporosus			<b> </b> —	<u>m</u> .	P			
229. — interstinctus	—		P	⊪ —	l —	<b>—</b>		
230. — trifidus	_	_	-	II —	P	<b> </b> —	<b>—</b>	
231. — dentiens	_	_	P	∥ —		-		
231 & pseudodentiens		_		ll —	P	V		D I
232. — Gothicus		_	l —	ll	_	_	<b> </b>	I
233. — Hartwegii	_	_	C	F	l —	_		
234. — Nuttallii	M	_	Č	F M	l —	_	v	I
235. — flectens	_	-	-	M	P	v	-	$\bar{\mathbf{D}}$

- 220, Acanthopleura scabra, Rve. = Californicus, Nutt. Insertion-plates resemble Katherina. Valves with coarse V-shaped ribs, and projecting beaks.
- 221. Acanthopleura fluxa, n. s. Green, mottled with orange-red; not beaked; with only marginal and diagonal ribs.
- 222. Ischnochiton Magdalensis. Hds. Large, strong-valved, typical. Sculpture much fainter than in southern shells. Mantle-margin with striated scales like flattened bristles. Side plates 2- or 3-lobed. Beach-20 fin. Cp.
   223. Ischnochiton veredentiens, n. s. Margin similar. Small, arched, sculptured like Mertensii, but with 2 rows of bosses, one of which dentates the sutures.
- 10-20 fm. Cp.
- 224. Lepidopleurus regularis, Cpr. P. Z. S. 1855, p. 232. Subgenus of Ischnochiton: mantle-scales Lophyroid, generally striated. Sp. arched, green, shagreened.
- Side lobes 2-4: eaves spongy, not projecting.

  225. Lepidopleurus scabricostatus, n. s. Small, arched, orange: rows of prominent granules over shagreened surface. Lobes blunt, slightly rugulose, close to eaves. 8-20 fm. Cp.
- 226. Lepidopleurus pectinatus, n. s. Olive: strong sculpture over shagreened surface: side areas ribbed: outer margin and inner sutures pectinated. Bch. Cp. 227. Lepidopleurus Mertensii, Midd. Red: highly sculptured over smooth surface:
- side areas with rows of bosses. Mantle-scales smooth, rounded.

  228. Trachydermon retiporosus, n. s. Subgenus of Ischnochiton: mantle-scales very small, close, smooth. Sp. like scrobiculatus, central pattern in network, 3-8 side ribs.
- 229. Trachydermon interstinctus, Gld. E.E. Centre minutely punctured: 6-8 blunt side ribs.
- 230. Trachydermon triftdus, n. s. Centre-punctures few, deep: 2-4 blunt ribs: side plates with 2 slits.
- 231. [Trachydermon dentions, Gld. E.E. No shell known answering to diagnosis and figure.] The 4 following species have incisors blunt, eaves not projecting.
- 231 b. Trachydermon pseudodentiens = type specimen of dentiens. False appearance of teeth due to colour or ridges of growth. Closely granular: areas indistinct. Sinus broad, squared: eaves spongy.
- 232. Trachydermon Gothicus, n. s. Blunt parallel riblets along very arched back.
- Sutural lobes united at sinus: eaves not spongy. 8-20 fm. Cp.
  233. Trachydermon Hartwegii, Cpr. P. Z. S. 1855, p. 231. Large, arched. Inside callous, without rows of punctures to slits: eaves spongy.
  234. Trachydermon Nuttallii, Cpr. P. Z. S. 1855, p. 231. Large, plain, flat. Incisors
- slightly rugulose: eaves spongy.

  235. Trachydermon flecters, n.s. Mantle-margin scarcely granular. Rosy, very small, scarcely sculptured: valves beaked and waved as in M. Simpsonii: caves and incisors normal. 135

	N utt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
236. Leptochiton nexus 237. Acanthochites avicula 238. Nacella instabilis 239. — incessa	_		_	_	_	-		I
237. Acanthochites avicula	_	_	- P D	I — I	-	_		Ι
238. Nacella instabilis	_	_	P	-	_	V	v	
239. — incessa	-	В	D	<u> </u>	-	_	- 1	MD
240. — subspiralis	_	_	<u>_</u>		_		<b>-</b>	I
241. — depicta		_		-	-	-	_	$\mathbf{D}$
242. — paleacea	_	В	- c		_	_	_	_
242 b. — var. triangularis	_			- '	-	-		M
243. Acmæa patina	C	C	C	VFM	P	v	v	<b>FMBI</b>
244. — pelta	Ċ	C	Ci	VFM	P	V	V	FMBI
244. — pelta		Č B	—	I	_		l — I	31
245. — persona	0	C	CC	VF	P	v	V	<b>FBDI</b>
246. — scabra	D	C	C	DIH	_	_	l — I	MDI
247. — spectrum	D	C	C	FDH				MBD
248. — rosacea	_	C B	_		_			MD
		_	C	FMIL	_	_	_	MBDI
249. Lottia gigantea	M	C	PC	VPF	P	v	$ \mathbf{v} $	MI
250 b. — Pvar. funiculata	_	_			_	_		M

- 236. Leptochiton nerus, n. s. Like asellus: scarcely sculptured: mantle-margin with striated chaffy scales, like Magdalensis, interspersed with transparent needles. 20-80 fm. Cp.
- 237. Acanthochites avicula, n. s. Like arragonites, but valves sculptured in large snake-skin pattern. 8-20 fm. r. Cp.

#### Family Patellida.

- 238. Nacella instabilis, Gld. E.E. Large: shape of compressa. 239. Nacella incessa, Hds. Sulphur. Small: Ancyloid.
- 240. ? Nacella subspiralis, n. s. Shaped like Emarginula rosea, and may be a Scutcllina. 10-20 fm. Cp.
  241. Nacella depicta, Hds. Sulphur. Small, long, flat, smooth: colour in rays.

- 242. Nacella paleacea, Gld. Otia. Narrower, brown, striated at each end. 242 b. Nacella? var. triangularis. Shorter: apex raised: scarcely striated: whitish, with brown spots.

# Family Acmeida. (For synonyms, v. Reports in locie.)

- 243. Acmæa patina, Esch. Large, blackish or tessellated: with very fine distant strise. Between tides, Lord.
- 244. Acmos pelta, Esch. More conical; border narrow; smooth, with blunt ribs often obsolete. Between tides, Lord.
- 244 b. Acmæa Pvar. Asmi, Midd. Stout, small, black, conical. Probably an ab-
- normal growth of pella, jun. (1 sp. beginning on pella) Cp.

  245. Acmon persona, Esch. Smaller: apex posterior: colour blotched or treckled: sculpture in irregular ribs. Maz. Cat. no. 266. Var. umbonata, arched, with narrow distant ribs. Var. digitalis, apex near margin. Var. textilis, apex far
- from margin, approaching pelta.

  246. Acmaa scabra, Nutt. Rve. Outside with close rows of fine granules: orangered tint, glossy. Var. limatula, sculpture stronger, border black: perhaps= Maz. Cat. no. 265.
- 247. Acmæa spectrum, Nutt. Rve. Flattened, with very strong ribs, irregular. 248. Acmæa (? pileolus, Midd. var.) rosacea. Pink, small: like Herm specimens of virginea.
- 249. Lottia gigantea, Gray. Genus reconstituted: mantle with papills interrupted in front. Shell large, flat, dark, lustrous (= Tecturella grandis, Smiths. Inst. Check List).
- 250. Scurria mitra, Esch. Papille all round the mantle. White, conical: young sometimes faintly sculptured. In dead clam, 12 fm. Lord.
  250 b. Scurria? var. funiculata. With rounded riblets, somewhat nodulous.

Like coca, but spex turned back. Farallone Iz. 251. Lepeta cacoides, Pn. s. teste R. D. Darbishire.

### Family Gadiniade.

252. Roscellia, sp. Genus proposed by Cooper: tentacles flattened, pectinated. Cat. Is. Cp. Far. Is. Rosc.

#### Family Fissurellides.

- 253. Fissurella volcano, Rve. = ornata, Nutt. Approaches Peruniana: hole variable. 254. Glyphis aspera, Esch. = Lincolni, Gray = cratitia, Gld. Large, coarsely sculptured, with colour-rays.

- 255. Glyphis densiclathrata, Rve. Smaller: with closer, finer sculpture.
  256. Lucapina crenulata, Sby. Tank. Very large: internal.
  257. Puncturella cucullata, Gld. E.E. Large, with strong, variable ribs, 15-40. Hole simple.
- 259. Puncturella galeata, Gld. E.E. Scarcely differs from noachina, but tripartite process more strongly marked.
- 259. Puncturella Cooperi, n. s. Outside like galeata, but without props to the lamina. 30-120 fm. not r. Cp.

### Family Haliotsda.

- 230. Haliotis Cracherodii, Leach, suct. The trade species, smooth, dark olive: holes 5-9. Var. Californiensis, holes 9, 10, 11.
- 281. Haliotis splendens, Rve. Flatter, grooved, lustrous. Holes 4-7. Below tide: on rocks, Op.
- 202. Haliotis corrugata, Gray. Large, arched, very rough. Holes 3-5. Below
- tide: on rocks, Cp.

  263. Haliotis rufescens, Swains. Large, flatter, waved, rich orange-red. Holes 3-5. Below tide: on rocks, Cp.

  264. Haliotis Kamtschutkana, Jonas. Small, thin, arched, waved. Holes 4, 5, Below tide: on rocks, Far. Is. Cp.

#### Family Trochide.

- 265. Phasianella compta, Gld. Otia. Maz. Cat. no. 284. Like pullus, a little longer and flatter; but operc. bevelled and striated. ? Var. pullus, exactly like Herm shells: ? var. elatior, dwarfed, longer and flatter: var. punctuinta, with
- close rows of dots; pillar chinked. 8-20 fm. Cp.

  238. Pomaulax undosus, Wood. Very large: operculum with 2 ridges.

  287. Puchypoma gibberosum, Chem. ?=inequale, Mart. Large, rough: operc. swollen, simple. (Dead.)

	Nutt.	Jew.	В. А.	Smiths. Ins.	Ken.	Lord	Swan.	Cooper.
268. P Imperator serratus	_			_			_	MI
268. P. Imperator serratus 269. Leptonyx sanguineus	-	M	<b> </b>	OFMI	-	_	V	MI
1 270. — bacula		l —	<b>-</b>	-	-	<b> </b> —	<del></del>	I
.71. Liotia fenestrata	-	_	_	- - - - - - - -	_	—		I
272.— acuticostata 273. Ethalia supravallata 273 b.— var. invallata 274. Livona picoides 275. Trochiscus Norrisii	— [*]	<b> </b> —	-	. –		—	-	MI
273. Ethalia supravallata	—	<b>—</b>	<b> </b>	-	_		-	DI DI
278 b. — var. invaliata	_	=	_ _ _	_			-	D
2/4. Livona picoides	7	B	7	_	_	_		
270. 1 rochiscus Norrisii	W	M	0	_	_	_	_	ш
276. —— convexus		C	c l	F-1	_	_	$ \overline{\mathbf{v}} $	MD
277 b.— var. subapertum		<u> </u>	_	1			۱v۱	
278. — gallina			ת	ī	_	_	انا	DI
279. — brunneum		_	õ	FMDI	_	_	l	M
280. — Pfeifferi	=	M	D C C			_		M D I
281. — aureotinctum		_	ICI	L	_	_	_	Ī
282. Omphalius fuscescens	В	M	l c l	D	_	_	<b> </b>	DI
283. Calliostoma canaliculatum		C	Č	M	<b> </b> —	<b> </b> —	V	M
284. —— costatum		C	C	VFMI	P	V	V	_
285. — annulatum		<b> </b>	C	M	_	V	V	
286. — variegatum	—	<b>-</b>	_	_	P	—		_

268. ? Imperator serratus, n. s. Small, finely sculptured, base stellate, nucleus Planorboid: operc. flat, with more whirls. 10-20 fm. = 266 or 267 jun. teste Cp. 269. Leptonyx sanguineus, Linn. n. g. Like Collonia, not umbilicate. Operc. with

horny and shelly layers, many whirls, outside flattish, not ribbed, margin broad. Species red or purple, lirate. Bch.-20 fm. Cp.

270. Leptonyz bacula, n.s. Small, ashy, Helicina-shaped, nearly smooth. Bch.

d. Cp. Genus = Homalopoma, p. 537: nom. preoc.

271. Liotia fenestrata, n. s. Small. Strongly ribbed each way. Bch.-40 fm. d. Cp.

272. Liotia acuticostata, n. s. Small. Sharply keeled, without radiating sculpture. 10-20 fm. Cp.

273. Ethalia supravallata, n. s. Minute: with keel and furrow near suture. 273 b. Ethalia? var. invallata. Without keel.

274. Livona picoides, Gld. Otia. Probably the remnant of an ancient colony of pica. 275. Trochiscus Norrisii, Sby. Tank. Nucleus as in Solarium: perhaps a Proboscidifer, though pearly.

276. Trochiscus convexus, n. s.

Small, subturrited, whirls swollen: umbilicus with 2 ribs, the outer crenated.

277. Chlorostoma functirale, A. Ad. P. Z. S. 1854, p. 316=marginatum, Nutt. non Rve. Blackish, often puckered near suture.

277 b. Chlorostoma functionale, var. subapertum, with umbilical pit. 278. Chlorostoma gallina, Fbs. P. Z. S. 1850, p. 271. Olive, dashed with purple. Var. pyriformis, Gld., umbilicus partly or wholly open.

279. Chlorostoma brunneum, Phil. Auburn: finely striate: Gibbuloid aspect. The

young (teste Cp.) has a basal rib.
280. Chlorostoma Pfeifferi, Phil. Like branneum: outside Ziziphinoid: umbilicus keeled.

281. Chlorostoma aureotinctum, Fbs. P. Z. S. 1850, p. 271=migerrimum, Gmel.? Mus. Cum. Gibbuloid: with distant grooves and fine sculpture; mouth orangespotted.

282. Omphalius fuscescens, Phil. Almost identical with ligulatus, Maz. Cat. no. 293.

283. Calliostoma canaliculatum, Mart. = dollarium. Large, with strong grooves. 284. Calliostoma costatum, Mart. = filosum, &c. Smaller, swollen, reddish; finely ribbed. 8-15 fm. Lyall.

285. Calliostoma annulatum, Mart. = virginsum. Large, granular, stained with violet. 286. Callicetoma variegatum, n. s. Small, more conical, nodules more distant, white on rosy ground.

138

				Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
287. Calliostoma supragranosum 288. — genumulatum 289. — splendens 290. Phorcus pulligo 291. Gibbula parcipicta 292. — optabilis 293. — funiculata 294. — succincta 295. — lacunata 296. Solariella peramabilis 297. Margarita cidaris 298. — pupilla 298 b. pu, salmonea	_	_	_	_	_	_	_	D
288. — genimulatum	_	<b> </b> —	<b> </b>	. —	_		l — I	$\widetilde{\mathbf{D}}$
289. — splendens	_	—			-			MI
290. Phoreus pulligo	-	_	M	FI	_	$\overline{\mathbf{v}}$	v	M I D
291. Gibbula parcipicta	<b> </b> —	<b> </b> —		FI	_	_	v	I
292. — optabilis	l —	l —	l —			_	l I	D
293. — funiculata	_	_	l — I	FIH	_	-	l v l	_
294. — succincts	l —	l —		FIH	_	_	V I	1
295. — lacunata	_	_	l _ l		_	_	ΙÝΙ	
296. Solariella peramabilia	l	<b> </b>	l i	l	_	_		ī
207 Margarita cideria	l	1_	l ˈ	voi	l		l v l	
298 nunille			P	VOI	P	V	ΙΫ́Ι	MI
298 b. — v.r. salmonea 299. — acuticostata			1	102	1	<u>ا</u>	•	MI
900 - acuticostata	1	D.	1	11				
200. — RCUITCOSUSUS	-	DJ8.	_	=	<u></u>	$\overline{\mathbf{v}}$	$\overline{\mathbf{v}}$	MLA
nnata	-		I —	-	P P	<b>V</b>	ľ	
301. — Ilrutata	_	—	_		F			-
300. — inflata	_	-	—	=	P	_	=	MI - - -
303. — tenuisculpta	-	-	—	∥ ·—	P	_	v	-
304. — helicina	-	—	—	∥ —	-	<b>—</b>	V	

- 287. Calliostoma supragranosum, n. s. Swollen, with sharp ribs; posterior 1-4
- granular. 288. Calliostoma gemmulatum, n. s. Very swollen: painted like eximium: with 2
- principal and 2 smaller rows of granules.

  289. Calliostoma splendens, n. s. Orange-chestnut, with fleshy nacre; small, rather flattened, base glossy. 6-40 fm. Cp.

  290. Phoreus pulligo, Mart. + maculosus, A. Ad. = euryomphalus, Jonas + marcidus, Gld. Subgenus of Gibbulz, with expanded, rounded umbilicus, and flat whirls; sometimes obsoletely ribbed.
- 291. Gibbula parcipicta, n. s. Like strong growth of Marg. lirulata, var. 292. Gibbula optabilis, n. s. Wider: decussated between ribs: 2 spiral lines inside umbilicus.
- 293. Gibbula funiculata, n. s. Shaped like Montagui: with rounded spiral riblets.
  294. Gibbula succincta, n. s. Small, scarcely sculptured, with spiral brown pen-
- cillings.
- 295. Gibbula lacunata, n. s. Very small, nearly smooth; umbilicus hemmed-in by swelling of columella.
- 296. Solariella peramabilis, n. s. Subgenus of Margarita, with open, crenated umbilicus. Species most ornate, with delicate sculpture. Umbilicus with 3 internal spiral lines, crossed by lirulæ: operculum sculptured. Like Minolis aspecta, A. Ad. 40-120 fm. living, Cp.
  297. Margarita cidaris, A. Ad. n. s. Large, knobby, like thin Turcica, with simple wills and small small smalls.
- pillar and small umbilicus.

  298. Margarita pupilla, Gld. E.E. = calostoma, A. Ad. Strong, with sharp ribs, decussated between, and fleshy nacre.

  8-15 fm. Lyall.
- 298 b. Margarita? var. salmonea. Between pupilla and undulata: salmon-tinted,
- sculpture fine, not decussated: sutures not waved. 6-40 fm. Cp.
  299. Margarita acuticostata, n.s. Small, painting clouded: 3 sharp ribs on spire. 8-20 fm. Cp.
- 300. Margarita inflata, n. s. Thin, whirls very swollen; sculpture very fine; spiral hollow inside keeled umbilicus.
- 801. Margarita livulata, n. s. Small: operc. smooth: 2 sharp principal riblets on spire: outline variable. Var. subelevata, raised, livid: var. obsoleta, sculpture evanescent: ? var. comica, very tall, with intercalary ribe, like G. parcepicta.
- 302. Margarita Vallii, Möll. Raised, smooth: operc. with spiral rib.
  303. Margarita tenuisculpta, ? n. s. Like obsoleta, but operc. ribbed.
  304. Margarita helicina, Mont. Like the Finmark shells. Circumborcal.

	Nutt.	Jew.	В. А.	Smiths. Ins.	Ken.	Lord.	Swap.	Cooper.
305. Crucibulum spinosum	M	В	C	DIL		_		חו
306. Crepidula aculeata	В	_	_	-		_	1 — 1	
307. — dorsata	C	В	P	_	P	V	$\mathbf{v}$	MD
308. —— excavata, var	_	_		_			<u> </u>	I
309. — adunca		В	OC	P	P	V	$\mathbf{v}$	MDI
310. — rugosa	В	В	C	PC		_		ы
311. — navicelloides	M		C P	OI		V	V	1
311 b. —— var. nummaria	_	_	P	_		_	V	
311 c. — var. explanata	C.	_	M			v	V	
312. Galerus fastigiatus			$\mathbf{P}$	1111	P	V	V	_
318. — contortus	_		_	_	_	_		MDI
314. Hipponyx cranioides	<u> </u>	_	_				$\mathbf{v}$	
315. — antiquatus	_	<b>?B</b>		-				PMI
316. —— serratus	_	_			_			1
317. —— tumens		В			_	_		MDi
318. Serpulorbis squamigerus		В	C	_ _ D	_	_	_	D
319. Bivonia compacta gma		_	_		_	_	$ \mathbf{v} $	. —
320. Petaloconchus macrophra-			_	${c}$	_			_
321. Spiroglyphus lituella			_	C	-	_	-	-

#### Order Pectinibranchiata. Suborder ROSTRIFERA.

#### Family Calyptræidæ.

305. Crucibulum spinosum, Sby. Maz. Cat. no. 344. From Southern fauna. 306. Crepidula aculeata, Gmel. Maz. Cat. no. 334. From Southern fauna. Round the world.

807. Crepidula? dorsata, Brod., var. lingulata, Gld. E.E.=var. bilobata, Maz. Cat.

no. 338—C. bilobata, Rve. Appears identical with the S. American shells.
308. Crepidula excavata, Brod. Maz. Cat. no. 337. S. American.
309. Crepidula adunca, Sby. Tank.—solida, Hds.—rostriformis, Gld. E.E. Dark liver, rough epidermis, solid deck with produced sides. [Not uncata, Mke.—rostrata, C. B. Ad., Rve.—adunca, Maz. Cat. no. 338.] Between tides, Lord;

810. Crepidula rugosa, Nutt. P. Z. S. 1856, p. 224. Probably northern var. of wayz, Sby. Maz. Cat. 340, with epidermis less shaggy.

811. Crepidula naticelloides, Nutt. Shape of squama, with nucleus of unquiformis (Maz. Cat. no. 342). Rounded var. in hollow bivalves=nummaria, Gld. Var. drawn out in layers like Lessonii=fimbriata, Rve. Var. elongated in crypts, scooped by crab or bivalve=explanata, Gld.=exuviata, Nutt.=perforans, Val.

812. Galerus fastigiatus, Gld. E.E. Like mamillaris, nucleus large, immersed. Large, in 8-15 fm. Lyall.

313. Galerus contortus, n. s. Whirls twisted: nucleus minute, prominent. 20-40 fm. Cp.

# Family Capulidæ.

- 314. Hipponyx cranioides, n. s. Large, rough, flat, intermediate between planatus and 315. Hipponyx antiquatus, Linn. Maz. Cat. no. 347. From Southern fauna. 316. Hipponyx serratus, Cpr. Maz. Cat. no. 346. From Southern fauna.
- 317. Hipponyx tumens, n. s. Growth like Helcion: sculpture more open than
- barbatus.

# Family Vermetidæ.

- Serpulorbis squamigerus, Cpr. P. Z. S. 1856, p. 226 (not Aletes). Large, scaly. Verm. anellum, Mörch, P. Z. S. 1861, p. 359, is perhaps the young.
   Bivonia compacta, n. s. Entirely open within: but colour and growth like
   Petaloconchus macrophragma, Cpr. Maz. Cat. no. 359. From Southern fauna.
   Spiroglyphus lituella, Mörch, P. Z. S. 1861, p. 154.

Nutt.	Jew.	B. A.	Smiths, Ins.	Ken.	Lord.	Swan.	Cooper.
		_		_	-		MDI
	-	·	_				$\mathbf{DI}$
	_	_	-		_		DI
<b>—</b>	B fs.	_	D Pfos.				
	-	<b> </b>		P	V		
	_	_		P		l v l	
l —	l	l —	_		_	_	$\frac{-}{\mathbf{D}}$
	c	c	CF		_	l — I	FD
	_	Ď	P	P	v	v	
	В		i	_	<u> </u>	ΙνΙ	MD
	_	_	M	_		_	
	_			_		_	D
_	R fa	_	_	_			ĎI
	R A			_	l	l l	D
						l l	
C	1 6		FDI				MDI
	"	lă		D	177	v	MAL'L
							-   -   -   -   -   -   -   -   -   -

#### Family Cacida.

322. Cacum crebricinctum, n. s. Large, with aspect of Elephantulum, but very fine close annular sculpture; plug subungulate. 8-20 fm. Cp.

323. Cocum Cooperi, n. s. Small, with 30-40 sharp narrow ring.

#### Family Turritellidæ.

- 324. Turritella Cooperi, n. s. Extremely slender, with many narrow whirls. c. Ch.
- 325. Turritella Jewettii, n. s. Like sanguinea, with very faint scuipture.
  320. Mesalia lacteola, P.n. s. May be a local var. of the circumpolar lactes, with altered sculpture: distinct, teste Cuming.
- 326 b. Mesalia ?var. subplanata. Sculpture fainter: whirls flattened.
  327. Mesalia tenuisculpta, n. s. Very small, slender, whirls rounded, lip waved. Shoal-water, Cp.

# Family Cerithiada.

- 328. Cerithidea sacrata, Gld. E.E. = Californica, Nutt. + pullata, Gld. Variable in shape and sculpture: passes into Mazatlanica, Maz. Cat. no. 395.

  329. *Bittium filosum, Gld. E.E. = Eschrichtii, Midd. Strong, broad, grooved.

  329b. Bittium? var. esuriens. Like starved filosum, very narrow, adult scarcely smilntured.
- sculptured.
- 830. Bittium attenuatum, n. s. Like plicatum, A. Ad., or drawn-out esseriens, with threads instead of grooves.
- 331. *Bittium quadrifilatum, n. s. Broad: 4 threads, equal from beginning, coiling over strong radiating ribs.
- 832. Bittium asperum, n. s. Same aspect: upper whirls with 2 strong and 2 faint keels over less prominent ribs. Bch.—40 fm. Cp.
- 333. *Bittium armillalum, n. s. Same aspect: 3 nearly equal rows of knobs.
  334. Bittium fastigiatum, n. s. Small, slender: apex normal: sutures indented, anterior rib strong.

#### Family Litorinidæ.

- 335. Litorina planaxis, Nutt. Phil.—patula, Gld. E.E. Outside plain; columella scooped.
- \$36. Litorina Sitchana, Phil. = sulcata, Gld. = rudis, Coop. Rounded, flat, with spiral ribs. Var. modesta, Phil. (pars) has sculpture faint: subtenebrosa, Midd., is perhaps a degraded var. Rocks between tides, Lord; 8-10 fm. Lyall [?].

These species have so peculiar a nucleus that they can scarcely rank near Cerithesm or Russoa: perhaps they are related to Aiaba. The nucleus of esseries and attenuatum has not been seen.

	Nutt	Jew.	В. А.	Smiths. Ins.	Ken.	Luni.	5wan.	Cooper.
337. Litorina scutulata		В	PF	POFMI	P	V	$ \mathbf{v} $	MDI
338. P Assiminea subrotundata	-	_			_	_	v	
339. ? Paludinella	<b> </b>	_		<b>-</b>	_		v	_
339. Paludinella		_			P		v	
341. — porrecta	<b> </b> —			l —	-P	- v	v	-
342. —— solidula		_	P	Ю	P	V	Ϋ́	_
342 b. — var. compacts 343. — variegata 344. — unifasciats		-	_ B	<u>-</u>		_	v	
343. — variegata	<b>—</b>	-		_		-	v	_
344. — unifaeciata	_	В	В	I		<b> </b> —		DI
345. Isapis fenestrata 346. — obtusa 347. Rissoina interfossa 348. Rissoa compacta 349. — acutelirata	-	-			-	-	v	DI
346. — obtusa	_	_		_	-	_		MBDI
347. Rissoina interfossa	-	<b> </b> —	l —		_	_	l — 1	MI
348. Rissoa compacta	_	-	l —	l — ·	P	_	v	-
349. — acutelirata	-	-	l —		_	_	1 — 1	D
350. Alvania reticulata	-	_	<b>—</b>	<b>-</b>		_	V	=
350. Alvania reticulata 351. —— filosa 352. Fenella pupoidea	<b> </b> —		<b> </b> —	<del>-</del>		_	v	_
352. Fenella pupoidea		—	l — '	∥ —	-	_	1 1	M
				DI	<b> </b> —	<b> </b> —	1 — 1	DI
353 b. —— ?var. rimata	<b> </b> —	<b> </b> -	—	D H	-	_	1 — 1	$\mathbf{D}$
854. — haliotiphila	<b> </b> —	1 —	<b> </b> —	H	<b> </b> —	_	l-1	
355. Amphithalamus inclusus	<b>—</b>	B	_	l —	<b> </b> —	_	1 — 1	$\overline{\mathbf{D}}$

337. Litorina scutulata, Gld. E.E.+lepida, Gld. Var.=plena, Gld. Small, solid, pointed, flattened, smoothish. Rocks between tides, Lord. 338. ? Assiminea subrotundata, n. s. Like a very thin Literina: ashen, plain.

339. ? Paludinella, sp. May be an aberrant Assiminea.
340. Lacuna vincta, Mont. auct. Circumboreal.
341. Lacuna porrecta, n. s. Upper whirls flattened, effuse anteriorly; chink large.
341 b. Lacuna ?var. effusa. Larger, taller, more swollen.

341 c. Lacuna ?var. exæquata, same shape but flattened.
342. Lacuna solidula, Lov.=carinata, Gld., not A. Ad.=Modelia striata, Gabb.

Solid, variable, chink small; sometimes keeled or angular.

Solid, variable, chink small; sometimes keeled or angular.

342 b. Lacuna variegata, n. s. Very small, narrow, orange, scarcely chinked.

843. Lacuna variegata, n. s. Very tall, effuse, irregular with wide chink: clouded or with zigzag stripes: like decorata, A. Ad.

844. Lacuna unifasciata, Cpr. P. Z. S. 1856, p. 205. Small, glossy, generally with a coloured keel, sometimes broken into dots. Var. aurantiaca, keel obsolete, membling the shipked Principles 18, 10 fm. Ch. resembling the chinked Phasianella. 8-10 fm. Cp.

845. Isapis fenestrata, n. s. Like oroidea, with sharp distant ribs. 346. Isapis obtusa, n. s. Whirls flattened behind: ribs swollen, uneven.

Family Rissoidæ.

847. Rissoina interfossa, n. s. With 5 sharp keels crossing 14 strong ribs. 8-10 fm. 348. Rissoa compacta, n. s. Sculptured like Beanti, with short broad whirls. 349. Rissoa acutelirata, n. s. Alvanoid: 15 sharp, distant, spiral riblets, travelling

over 18 sharp distant ribs, obsolete in front.

350. Alvania reticulata, n. s. Open network: radiating threads travelling over 12

stronger distant spiral threads. 351. Abania filosa, n. s. Turrited: pillar purple-stained: 18 close spiral striss, passing over very faint waved riblets.
352. Fenella pupoidea, n. s. Variegated, truncatelloid shape. 20 fm. rare, Cp.
353. Barlesia subtensis, n. s. = Hydrobia ?uloæ, Max. Cat. no. 417; but with normal

Barleeoid operculum. On grass, Cp.

Barleeoa ?var. rimata. Whirls more swollen: base chinked.

353 b. Barleeia ?var. rimata.

354. Barleeia haliotiphila, n. s. Longer, narrower, much smaller. On H. splendens. 355. Amphithalamus inclusus, n. g., n. s. Habit of minute Nematura; labrum not contracted, but labium in adult travels forward to meet it, leaving a chamber behind. Nucleus cancellated: base bluntly ribbed.

	Natt.	Jew.	B. A.	Smithe Inc.	Ken.	Lord.	Swan.	Cooper.
356. ?Amphithalamus lacunatus 357. Truncatella Californica 358. Jeffreysia Alderi 359. transluceus 360. Cithna albida 361. Diala marmorea 362. acuta 363. Styliferina turrita 364. Radius variabilis	_	_		_	_	_		D
357. Truncatella Californica	_	_	_	_	_	_		D
358. Jeffreysia Alderi	_	_	-	D		_	l — I	
359. —— translucens	-	_	_		_	-	l — I	$\overline{\mathbf{D}}$
360. Cithna albida	_		-	H	_	<b>—</b>	_	D
361. Diala marmorea	-	_	_	H				MD
362. — acuta	-	-		=	-	-	<del></del>	ΜI
363. Styliferina turrita	_	-	-			-		D
364. Radius variabilis	-	PB	_	-	-	_	<del></del>	
365. Luponia spadicea 386. Trivia Californica	-	C		L L	_	_	- 1	DΙ
366. Trivia Californica	-	В	Č	L	_	_		ĎΙ
3:7. —— Solandri		-	_		-	_		Ĭ
368. Erato vitellina	_	В	C	ī	-	_		DI
369. —— columbella	_	В	C	L	_	_	—	MDI
369. — columbella	-	В	<u>c</u>	-		_	-	_ <b>D</b> _
371. Drillia inermis	_	В	C	-	_	_	==	BDI
372. — incisa	_	_	-		P	_	$ \overline{\mathbf{v}} $	_
373. — mœsta	-	В	-	=	-	_		D
374. — torosa	_	-	_	M.	-			M
374 b. —— ?var. aurantia	-	-	-	D		_	-	D

- 356. ? Amphithalamus lacunatus, n. s. Same nucleus; base chinked, not keeled. (Adult not found.)
- Family Truncatellida. 357. Truncatella Californica, Pfr. Pneum. Viv. Suppl. vol. ii. p. 7.

- Family Jeffreysiadæ.

  358. Jeffreysia Alderi, Cpr. Maz. Cat. no. 420.

  359. Jeffreysia translucens, n. s. Possibly a Barleeia: pillar thickened, base rounded.

  360. Cithna albida, n. s. Very close to C. tumens, Mas. Cat. no. 421, but umbilicus angled, not keeled.
- Family Planaxida. 381. Diala marmorea, n. s. Solid, glossy, clouded with red: base faintly angled. 3:2. Diala acuta, n. s. Base flattened, sharply angled: turrited. Bch.-10 fm. Cp. 363. Styliferina turrita, n. s. Minute, slender, base rounded.

Family Ovulidæ. 364. Radius variabilis, C. B. Ad. Max. Cat. no. 435. Probably exotic.

### Family Cypræides.

- SG5. Luponia spadicea, Gray. Like onyx, but light-coloured.
  366. Trivia Californica, Gray. Small: ribs sharp, distant.
  367. Trivia Solandri, Gray. Maz. Cat. no. 441. From Southern fauna. Sta. Barb. and St. Nich. Is. common, Cρ.
  368. Erato vitellina, Hda. Sulph. Large, wide-mouthed: paries callous.
  369. Erato columbella, Mke.=leucophæa, Gld. Maz. Cat. p. 537. Perhaps a var. of Maugeræ, from the tropics. 20-40 fm. c. Cp.

#### Suborder TOXIFERA. Family Terebrida.

- 370. Myurella simplex, n. s. Sculpture very faint and variable: shape of albocineta. c. Cp.
  - Family Pleurotomidæ.
- 371. Drillia inermis, Hds. Sulph. Early whirls close sculptured. Beach-16 fm. living. Cp.
- 372. Drillia incisa, n. s. Like inermis: spiral sculpture grooved, not raised.
  373. Drillia mæsta, n. s. Like large luctuosa: middle whirls with long transverse ribs and posterior knobs; adult obsolete.
- 374. Drillia torosa, n. s. Whirls rounder, olivaceous: with one row of strong bosses throughout: no posterior knobs.
- 374 b. Drillia Pyar. aurantia. Orange, with sutural riblet and faint spiral sculpture. 1863. 143

	Nutt.	Jew.	B. A.	Smitha, Ins.	Ken.	Lord.	Swan.	Cooper.
375. Drillia penicillata	_	_	_	L	_	_	-	
376. —— cancellata	_	— ·	_		P	_	l — I	_
S76. — cancellata   S77. Mangelia levidensis   S78. — tabulata   S79. — interfossa   S80. — crebricostata   S81. — variegata   S81. — Pvar. nitens   S82. — angulata   S83. Bela fidicula   S84. — creuventa   S84. — creuventa   S84. — creuventa   S84. — creuventa   S85. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuventa   S86. — creuve	_	<b> </b> —	-		P	-	V	
378. —— tabulata	_	<b> </b> —	-	11111	_	_	V	
379. —— interfossa	<b> </b> —	l	-		-	_	V	
380 crebricostata	_	<b>—</b>	-		_	_	V	
981. — variegata	<b> </b> —	B	<b> </b> —	- 1		_		
381 b. —— Pvar. nitens	_	В	<b> </b> —	- 1	_	_	1 — i	_
382. — angulata	_	В		-	P		<u> </u>	M
383. Bela fidicula	_	_	P	l — !	P	v	_	
DOW CACUIVAGO			-	<b> </b>	P	_		
385. ? Daphnella aspera 386. ? —— filosa	_	_	- - - c	M	_	_		
386. ? — filosa	l —	В	<b> </b> —	-	_	<b> </b>		
387. ? —— effusa	<b>!</b> —	1 —	_	_	_	_	V	_
388. Conus Californicus	_	В	C	D		_	;	$\mathbf{DI}$
389. Obeliscus ?variegatus	<b> </b>	_	<b> </b> —	D L	_	_	l — !	$\mathbf{D}$
390. Odostomia nuciformis		_		_	l —	_	$ \mathbf{v} $	
390 b. — Pvar. avellana		_	<b> </b> _	H	<b> </b>		v	=
391. — satura		_	_	ll		_	v	
801 h Prar. Gouldii	l —	_	_		l —	<b>—</b>	V	_
392. — gravida	<b> </b>	В	<b> </b>	I —			_	$\overline{\mathbf{D}}$
393. — inflata	l	1 <u> </u>	l —	II	l	l	$ \mathbf{v} $	_

375. Drillia penicillata, n. s. Like inermis, with delicate brownish pencillings. 376. Drillia cancellata, i'n. s. Like the young of incisa, but nodosely cancellated. 377. Mangelia levidensis, n. s. Stumpy, purplish brown, with rough sculpture. 878. Mangelia tabulata, n. s. Stout, strongly shouldered, coarsely cancellated. Pillar abnormally twisted. 379. Mangelia interfosea, n. s. Like attenuata, delicately cancellated. 380. Mangelia crebricostata, n. s. Like septangularis, with closely set ribs. 381. Mangelia variegata, n. s. Small, slender, thin, zoned with brown: 9 narrow ribs, and strong spiral striæ.

381 b. Mangelia Pvar. nilens. Glossy: spiral lines almost obsolete. 382. Mangelia angulata, n. s. Shape of variegata, but brown, whirls broad, angular. 883. Bela fidicula, Gld. E.E. Very close to turricula, var. 8-10 fm. Lvall. 383. Bela fidicula, Gld. E.E. Very close to terricula, var. 8-10 fm. Lyall. 384. Bela excurvata, n. s. Like Trevelliana: stumpy, Chrysalloid. 385. P. Daphnella † aspera, n. s. Elongated, with coarse fenestration. 386. ? Daphnella + filosa, n. s. Small, diamond-shaped, but rounded periphery; spirally threaded. 387. ? Daphnella † effusa, nom. prov. Thin, extremely drawn-out, sculpture faint.

### Family Conidæ.

388. Conus Californicus, Hds. Sulph. = ravus, Gld. Chestnut, plain.

Suborder PROBOSCIDIFERA. Family Pyramidellida.

From Gulf fauna. Periphery with spiral groove. 389. Obeliscus Prariegatus, n. s. Colour-pattern clouded.

390. Odostomia nuciformis, n. s. Very large, solid, Tornatelloid. 390 b. Odostomia ?var. avellana. Shape of conoidalis.

391. Odostomia rvar. accuma. Snape of constants.
391. Odostomia satura, n. s. Large, with swollen whirls like Bithinia similis.
391 b. Odostomia rvar. Gouldii. Taller, base gently rounded.
392. Odostomia gravida, Gld. Otis. Like conoidalis, but nucleus minute.
393. Odostomia inflata, n. s. Like large dolioliformis: with most minute spiral striulation. Farallone Is. On Hal. rufescens, teste Darbishire.

A peculiar group of species, resembling Chonella (marine, teste Stimpson.)

† Generic position of all these doubtful: perhaps they belong to genera not yet eliminated: filosa resembling the Eocene forms between Comus and Pleuratoma.

	Nutt.	Jew.	B, A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
394. Odostomia stramines		-	_	Н		_		C
295. — tenuisculpta	_	-	-	l —	_	_	V	
396. Chrysallida cincta	-	-	_	_	_		l i	I
397. — pumila	<b> </b>	-		<b>—</b>	_	_		$\mathbf{DI}$
398. Dunkeria laminata	_	В	_	_	_	-		$\mathbf{D}$
399. Chemnitzia tridentata		В	_		P	_		MD
400. —— chocolata	_	_	_	_	_	_		$\mathbf{D}$
4^0b.—— var. aurantia		В	_	_	P	-		
40i. —— tenuicula	<b> </b> —	В	В	_	_	<b> </b> —		D D
401 b ?var. subcuspidata	<b> </b>	-	_		_	<b> </b> —	<b> </b>	$\mathbf{D}$
402. — crebrifilata	-	В	_		_	<b>—</b>		_
403. —— torquata		В	_	l —	P	v	l — I	
403b.—— ?var, stylina		В	11111		_	l —		M
404. — virgo	<b>—</b>	В	_	_	_	<b> </b> —		
405. Eulima micans	<b>—</b>	_	_	<b>⊩</b> —	P		V	DI
406. —— compacta	-	_	_		_	<b> </b> —		$\mathbf{D}$
477. —— rutila	_	_		<b>—</b>	_	<u> </u>	1 — 1	M
408. —— thersites	_	В	_		_		I — I	_

- 394. Odostomia straminea, n. s. Like tall var. of inflata, with straw-coloured epidermis, not striulate.
- 395. Odostomia tenuisculpta, n. s. Like sublirulata, Maz. Cat. no. 487, with obsolete sculpture throughout.
- 396. Chrysallida cincta, n. s. Passing towards Mumiola. Radiating sculpture very faint.
- 397. Chrysallida pumila, n. s. Like ovulum, Maz. Cat. no. 512, but slender; spiral lines delicate.
- 398. Dinkeria laminata, n. s. Subgenus of Chemnitzia, with rounded whirls: typical species. Aspect of Fenella, finely cancellated.
  399. Chemnitzia tridentata, n. s. Large, chestnut: 19-24 ribs, evanescent at periphery: waved interspaces with 8-10 spiral grooves: labrum with 3 teeth, hidden as in Obeliecus: base round.
- 400. Chemnitzia chocolata, n. s. Same size and colour: not toothed: base prolonged: crowded ribs minutely striulate between.
- 400b. Chemnitzia ?var. aurantia. Intermediate between the above: orange, base round; 28 ribs, striulate between.
- 401. Chemnitzia tenuicula, Gld. Otia. Shape of tridentata dwarfed: whirls flatter,
- base prolonged, spiral grooving strong.

  471 b. Chemnitzia ?var. subcuspidata. Ribs more distant, muricated at sutures.

  472. Chemnitzia crebrifilata, n.s. Slender, whitish: with 8 spiral threads passing over 24 ribs, evanescent round base.
- 403. Chemnitzia torquata, Gld. Otia = Vancouverensis, Gld. Ribs truncated before periphery, leaving plain band above sutures.
  403b. Chemnitzia ?var. stylina. Like torquata, tapering, less swollen in front, with
- more ribs, band less marked.

  404. Chemnitzia virgo, n. s. Very slender, with short, smooth base: 18 ribs, evanescent at periphery, and 8 spiral grooves.

### Family Eulimide.

- 405. Eulima micans, ? n. s. Perhaps a small var. of the European polita. 30-40 fm. living. Cp.
- Estima compacta, ? n. s. Small, with blunt spire and clougated. Like producta, Eulima rutila, ? n. s. Leiostracoid, rosy, base lengthened. Like producta, 407. Eulima rutila, ? n. s. Maz. Cat. no. 551.
- 408. Eulima thersites, n. s. Very broad, short, twisted.

10

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swap.	Cooper.
400. Scalaria Indianorum				_			v	
400b. — Pvar. tincta	_			L	_	_	_	D D
410. — PCumingii	_	_	<b>—</b> [		_	_	l — I	D
410 b.—— ?gracilis		_	-	$\overline{\mathbf{p}}$	_	_		
411. — subcoronata		_	<b> </b> —		_	<b>—</b>	-	M
412. —— crebricostata	—		<del></del>	<u> </u>	_			MD
419 — hollostriata	1			. —	_	<b>—</b>	-	M
414. Opalia borealis	-	_	F	_	<b>—</b>	<b> </b> —	V	<u> </u>
414. Opalia borealis	_	Bfs.	1111111	_	_	<b>—</b>		
416. — spongiosa	_	- B	-	<u> </u>	_	_		Ŵ
417. — retiporosa	<b>—</b>	_	-	_	_	-	<del></del>	I
418. — bullata	- 1	R	-	_	-			750
419. Cerithiopsis tuberculata		R	_	_	_	_	V	MD
420. —— columna		_	_	_	—	_	V	M
421. — munita		_	-	_		—	V	MD
422. — purpurea		B	_	-			_	MD
423. — fortior	_	В	_	-	—	_	_	<del>-</del>
424. — assimilata	—	_	_		_	_	$\overline{\mathbf{v}}$	I
425. Triforis Padversa			<b>—</b> 1	_		_	v	1
426. Cancellaria modesta		-	_	_	_	_	▼	

Family Scalariada.

409. Scalaria Indianorum, ? n. s. Between Turtonis and communis: like "Georgettina, Kien. Mus. Cum. no. 34, Brazil."

409 b. Scalaria ?var. tincta. Purple-brown behind: like regularis, without spiral sculpture.

410. Scalaria? Cumingii, Cpr. P. Z. S. 1856, p. 165.

410b. Scalaria ? gracilis, Sby. in Mus. Cum.

411. Scalaria subcoronata, n. s. Like young communis, with more and sharper ribs, faintly coronated when adolescent.

412. Scalaria crebricostata, n. s. = Mus. Cum. no. 32: 15 sharp reflexed ribs, coronated against the sutures.

413. Scalaria bellastriata, n. s. Shape like pretiosa, jun.: ribs very close, spinous at shoulder, crossed by spiral riblets.
414. Opalia borealis, Gld. E. E. Very close to australis: obsolete forms like Ocho-

tensis, Midd.

415. Opalia (Perenatoides, var.) insculpta. Like the C.S.L. form and crenata, but ribs closer, without spiral sculpture, sutural holes behind the basal rib.
416. Opalia spongiosa, n. s. Like small, very slender granulata: surface riddled

with deep punctures in spiral rows.

417. Opalia retiporosa, n. s. Sculpture in network, with deep holes. 40 fm. d. r. Cp. 418. Opalia bullata, n. s. Shape of Rissoina: with sutural bosses: no basal rib.

Family Cerithiopsidæ.

419. Cerithiopsis tuberculata, Mont. Fbs. & Hanl. Agrees with the British rather than with the Mazatlan form, Cat. no. 557.

420. Cerithiopsis columna, n. s. Very tall: nodules close, like strung figs.

421. Cerithiopsis munita, n. s. Stout: strongly sculptured: base evenly ribbed.
422. Cerithiopsis purpures, n. s. Stained with purple: nodules fine: base fixely

423. Cerithiopsis fortior, n. s. Sculpture open: strong basal rib.
424. Cerithiopsis assimilata, C. B. Ad. Maz. Cat. no. 568. With spiral keels. From Southern fauna.

425. Triforis ?adversa, Mont. Fbs. & Hanl. Agrees with British specimens. 10-40 fm. v. r. Cp. Family Cancellariada.

Like Trichotropis borealis, with two slanting paits 426. Cancellaria modesta, n. s. and spiral ribs travelling up the paries. See also p. 615, nos. 463, 817. 146

				Smiths. Inc.	Ken.	Lord.	Swan.	Cooper.
427. Trichotropis cancellata 428. — inermis 429. Velutina lævigata 430. — prolongata 431. Natica clausa 432. Lunatia Lewisii	_		P	_	P	_	v	
428. — inermis	_	_				-	V	_
429. Velutina lævigata	_	_	_	l —	P	_	v	
430. — prolongata	_		_	I — :	$\frac{-}{P}$	_	V	_
431. Natica clausa	_	_	P	-	P	_	v	_
432. Lunatia Lewisii	_	C	P	- - P	P	_	V	$\frac{-}{\mathbf{D}}$
433. — pallida	_		P	l —	P	- - v	V	$\frac{-}{\mathbf{D}}$
434. Neverita Recluziana	_		_	D	$\frac{-}{\mathbf{P}}$	$\overline{\mathbf{v}}$	1	D
435. Priene Oregonensis	_	_	P	VP	P	V	v	M
436. Ranella Californica	_	_	_	L	_	_		$\mathbf{BD}$
437. Mitra maura	C	_	_	I	_	_	I — I	DI
438. Marginella Jewettii	-	В	-	-		_		MI
439. —— subtrigona		В	_	<u></u>	_	_		
440. —— regularis	_	В	_	_	_		<b>—</b>	MDI
441. Volutella pyriformis	_	_	_	F	_	_	I — I	D
430. — prolongata 431. Natica clausa 432. Lunatia Lewisii 433. — pallida. 434. Neverita Recluziana 435. Priene Oregonensis 436. Ranella Californica 437. Mitra maura 438. Marginella Jewettii 439. — subtrigona 440. — regularis 441. Volutella pyriformis 442. Volvarina varia 443. Olivella biplicata 444. — bettica	-	В		-	_			DI
443. Olivella biplicata	C	C	C	l D	_	_	V	MDI
444. — bætica	- 1	B	OC.	M	P	_	v	D

427. Trichotropis cancellata, Hds. Sulph. Sculpture strong, open. Epidermis bristly. 428. Trichotropis inermis, Hds. Sulph. Sculpture faint: not bristly.

#### Family Velutinida.

- 429. Velatina larigata, Linn. Fbs. & Hanl. Exactly accords with British specimens. ?= Kamtschatkana, Desh.
- 430. Velutina prolongata, n. s. Spire very small. Labrum produced in front.

### Family Naticida.

- 431. Natica clausa, Brod. & Sby. Umbilicus closed. Operc. shelly. Circumboreal. 432. Lunatia Lewisi, Gld. E. E. = herculæa, Midd. Whirls flattened behind. Abun-
- dant on beach, Cp.
- 483. Lunatia pallida, Br. & Sby. = caurina + soluta, Gld. Globular, compact, whitish. Boreal
- 434. Neverita Recheziana, Petit, Rve. Large, solid, raised, with brown grooved lump on pillar. Also Guaymas.

#### Family Tritonida.

435. Priese Oregonensis, Redf. Like cancellata, but coarser sculpture. 6 fm. Lyall. 436. Ranella Californica, Hds. Sulph. Scarcely differs from fine specimens of R. ventricosa, in Mus. Cum.

## Family Fasciolaridæ.

437. Mitra maura, Swains. Nutt. = orientalis, Gray = 'Chilensis, Gray,' Kien. Very dark and plain. Peru. Sand between rocks, l. w. Cum. Peru.

#### Family Marginellida.

- 438. Marginella Jewettii, Cpr. P. Z. S. 1856, p. 207. Like the Mogador species, somewhat shorter and broader. 10-20 fm. Cp.
  439. Marginella subtrigona, n. s. Shape of Erato columbella.
  440. Marginella regularis, n. s. Between Jewettii and minor, C. B. Ad. Maz. Cat. no. 587. Beach-20 fm. Cp.

- 441. Volutella pyriformia, n. s. Genus of Swainson (not D'Orb.) = Closia, Gray.
  Like V. margaritula, Mas. Cat. no. 589, but produced in front.
- 412. Volcarina varia, Sby. C. S. Lucas, W. Indies.

#### Family Olivide.

443. Olivella biplicata, Sby. Tank. = glandinaria, Nutt. Nut-shaped.
444. Olivella batica, n. s. Narrow, dull, thin: has been erroneously called anazore, tergina, petiolita, and rufifasciata.

•	Nut.	Jew.	В. А.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
445. Nassa fossata			PC		P		v	D
446. — perpinguis	_	В	C	(PP)L		<b>—</b>	-	$\mathbf{BDI}$
447. — insculpta	_	<u>c</u>	_ P		P	$\frac{1}{v}$	$ \overline{\mathbf{v}} $	I
449. — mendica	_	C	P	POF	P	V	V	MD DI
449. — Cooperi		_	LC	L		_		D
451. Amycla gausapata	_	В	P	vĎ	P	V	$\overline{\mathbf{v}}$	M
452. —— P Californiana	_	$\bar{\mathbf{B}}$	C		_	_	_	· <del>_</del> .
453. — tuberosa		Bfs.		=	-	_	V	MDI
454. ? —— chrysalloidea	-	_	-	-	-	-	-	Ď
455. ?—— undata	_	_	$\frac{0}{0}$	VPFMI	$\overline{\mathbf{P}}$	_	$\frac{1}{\mathbf{v}}$	I DI
456. P Truncaria corrugata 457. Columbella carinata	_	<u>B</u>	č	ALLMI	r		V	MDI
457 b. —— ?var. Hindsii	_	В	Ď				$\overline{\mathbf{v}}$	MD
458. Purpura crispata		F	c l	VPOF	P	v	V	F
459. —— canaliculata	-	— ļ	- 1	VF	_	V	V	
460. —— saxicola		C	C	VPF	P	V	V	FI
460b. — var. fuscata	<del>-</del>	$\frac{-}{\mathbf{B}}$	PC	$\overline{\mathbf{D}}$	-	-	V	$\overline{\mathbf{D}}$
460c. — var. emarginata	В	F	č	POC	P	$\overline{\mathbf{v}}$	$\overline{\mathbf{v}}$	FD
war. Ostring			<u>ا</u> ا	100		٧	١ ٠	rD

# Family Buccinidæ.

- 445. Nassa fossata, Gld. E. E. = elegans, Rve. non Desh. Large, broad, flattened spire.
- Aussa perpinguis, Hds. Sulph. Same type, smaller, rounder, narrower.
  Aussa insculpta, n. s. Zeuxis, with varix and non-reflexed callus. Spirally grooved. 40 fm. living, r. Cp.
  Aussa mendica, Gld. E. E. + Gibbesi, Coop. = Woodwardii, Fbs. Very variable: some forms approach trivittata.
  Aussa Committee P. 7. S. 1850 p. 279. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. J. Libra and F. Libra and F. Libra and

- 449. Nassa Cooperi, Fbs. P. Z. S. 1850, p. 273. Like mendica, with 7 distant ribs, and fine spiral sculpture.
  450. Nassa tegula, Rve. Maz. Cat. no. 624. From Southern fauna.
  451. Amycla gausapata, Gld. E. E. (Genus rearranged for Columbellids with Nassoid opercula, probably including Alia and Astyris.) Strong, solid, varied and Astyria. gated, smooth.
  452. Amycla? Californiana, Gask. P. Z. S. 1851, p. 12. Whirls more swollen.
- Very close to minor, Scacchi, but with different nu-453. Amycla tuberosa, n. s. cleus. 8-10 fm. c. Cp.
- 454. ? Amycla chrysalloidea, n. s. Shape of Tremcaria eurytoides, but mouth not effuse: spirally furrowed. Shoal-water, Cp.
- 455. ? Amycla unda'a, n. s. Like stumpy, small corrugata, with waved sculpture. 40 fm. not r. *Cp*.
- 456. P Truncaria corrugata, Rve. Conch. Ic. ("Buccinum:" "Pisania," Add. May be an Amycla.) Large, with waved ribs and spiral striæ. Dwarfed at 40
- fm. Cp.
  457. "Columbella" carinata, Hds. Sulph. Small, turrited, smooth, with stout posterior keel. (Perhaps Amyela.) Beach, Cp.
  457b. Columbella ?var. Hindsii, Rve. Keel shorter, till it ceases, as in gausapata.

# Family Purpuridæ.

- 458. Purpura crispata, Chem. = plicata, Mart. = lactuca, Esch. = septentrionalis, Rve. +&c. Large, strong, canal distinct, smooth or foliated.
- 459. Purpura canaliculata, Ducl. = decemcos ata, Midd. + attenuata, Rve. + analoga,
- Fbs. With elegant spiral grooves. Chrysodomoid.

  490. Papura saricola, Val. = lapillus, Coop. Like the Atlantic species, rough, pillar scooped, with brown spiral lines.
- 460b. Purpura var. fuscata, Fbs. Raised thin form, dull, with faint sculpture. 460c. Purpura var. emarginata, Desh. Short, swollen, with scaly sculpture. 460d. Purpura var. ostrina, Gld. E. E. Short, swollen, nearly smooth.

	Nutt.	Jew.	В. А.	Smiths. Ins.	Ken.	Lord.	dwan.	Cooper.
461. Monoceros engonatum	В	_	C	D			_	DI
461 b ?var. spiratum	_	<b> </b> —	<b>-</b>	_	_		_	I
461 b. — Pour. spiratum 462. — lapilloides 463. Ocinebra lurida and vars.	В	_	C	D	_	_		I
463. Ocinebra lurida and vars.	_	B fa.	_	FI	_	$\mathbf{v}$	v	M jun. l
464. —— interfossa		<b>—</b>	l i	MI	P	V	v	Mjun.
464. — interfossa	C	? B	_	L				
466. Cerostoma foliatum	<b> </b> —	l —	0	L PODI fs.	${\mathbf{P}}$	$\overline{\mathbf{v}}$	v	
466. Cerostoma foliatum 467. — Nuttallii	В	В	O C C D		_	_		DI
468. — monoceros	_	_	C	L	_	_	_	? D
468. — monoceros			D	L	_	_	_	D
470. Nitidella Gouldii	_	В			P	_	v	MD
471. Pedicularia Californica	_	_	<u>_</u>	TO I	_	_	_	
472. Pteronotus festivus	_	C	L	120	_	_	l — I	$\overline{\mathbf{D}}$
473. Muricidea Californica	_	_	LC	_	_	_		MBDI
474. Trophon multicostatus	_	_	_		P	v	$\left  \frac{-}{\mathbf{v}} \right $	
475. — Orpheus	_	_	P		– P P	v		$\frac{-}{I}$
476. — triangulatus	_	_					l — I	I
471. Pedicularia Californica 472. Pteronotus festivus 473. Muricidea Californica 474. Trophon multicostatus 475. — Orpheus 476. — triangulatus 477. Siphonalia Kellettii 478. — fuscotincta		_	P	<b>D</b>	_	_		$\bar{\mathbf{BD}}$
478. — fuscotincta	_	В	_	-		_	ا ـــ ا	
479. Chrysodomus tabulatus		B fa.	_		?Pjn	V	v	19
480. — liratus			P — — —	(D)		_	انا	_
							ll	

- 461. Monoceros engonatum, Conr. = unicarinatum, Sby. Brown-dotted, with sharp
- posterior keel, smoothish. Beach, Cp.
  461b. Monoceros Pvar. spiratum (Blainv.). Light colour; scaly; horn not developed. 462. Monoceros lapilloides, Conr. = punctatum, Gray + brecidens, Conr. Not shouldered: shape of lapillus.
- 463. Ocinebra turida, Midd. (Genus reconstituted for Diuricola Lupudia irregular varices.) Like canaliculata, brown, with swelling ribs. Beach on

- 463b. Ocinebra var. aspera, Baird. Sculpture rough.
  463c. Ocinebra var. munda. Tall, with faint sculpture.
  464. Ocinebra interfossa, n. s. Purple-brown, with latticed sculpture.
  465. ? Ocinebra Poulsons, Nutt. Shape like M. manoceros, with brown spiral lines.
- 466. Cerostoma foliatum, Gmel. = monodon, Esch. Large, with winged varices.
  467. Cerostoma Nuttallii, Conr. Smaller, pear-shaped: interstices scarcely sculptured.

- 468. Cerostoma monoceros, Sby. Spire raised: whirls rough, rounded.
  469. Chorus Belcheri, Hds. Sulph. Very large, with irregular varices like Trophon.
- L. w. com. Op. 470. Nitidella Gouldii, Cpr. P. Z. S. 1856, p. 208. Slender: like thin A. gausapata, with Purpuroid operc.
- 471. Pedicularia Californica, Newc. Small, purple, highly sculptured.

# Family Muricidæ.

- 472. Pteronotus festivus, Hds. Sulph. Form irregular; frills reflexed.
  473. Muricidea Californica, Hds. Sulph. Varices faintly developed. L.w.-20 fm. Cp.
  474. Trophon multicostatus, Esch. = Gunneri, Lov. Rve. Frills spiny behind: not sculptured spirally. Circumpolar.
  475. Trophon Orpheus, Gld. E. E. Like the last, with distant spiral riblets.
  476. Trophon triangulatus, n. s. Typhoid shape: frills triangular, white. 60 fm. Cp.
  477. Siphonalia Kellettii. Fbs. P. Z. S. 1850, p. 274. Very large, turrited, with swollen whirls. Also Japan. 1 living 6½ in. long.
  478. Siphonalia fuscotincta, n. s. Like the same in extreme miniature.
  479. Chrysodomus tabulatus, Baird, P. Z. S. 1863, p. 66. Large, with posterior keel, and delicate sculpture. 120 fm. dead, Cat. Is. Cp.
  480. Chrysodomus livatus, Mart. = decemcostatus, Midd. (? Say) = Middendorffii, Coop. Swollen, with distant keels. Whidby's 1s.

- Swollen, with distant keels. Whidby's Is.

	Nutt.	Jew.	B. A.	Smiths. Ins.	Ken.	Lord.	Swan.	Cooper.
481. Chrysodomus dirus	_	_	P	VI	P	V	v	_
482. — rectirostris	<b> </b> —	_	<b>—</b> .	- 1	P			
483. Fusus ambustus	_	B fs.	C	FMI			- 1	BDI
484. Macron Kellettii	_	-	L	L	l —			PΙ
485. —— lividus	_	_	_	L	<b>—</b> '	_	- 1	D D DI
486. Anachis subturrita	_	_	_	_	_	_	l — I	D
487. ? — penicillata		В	_		<b> </b> —	_		DI
488. Argonauta Argo		l —			l —		<b> </b> _ 1	I
489. Octopus punctatus	_	_	_	(FL)	PP	_	PV	I
490. Ommastrephes giganteus .		_	_	`-	_		_	I
491. — Avresii	l —		l — 1	l				I
492. Onychoteuthis fusiformis.	—	<b> </b> —	-	P M	P₽	-		Ī

- 481. Chrysodomus dirus, Rve. = incisus, Gld. = Sitchensis, Midd. Dark liver, with spiral grooves.
- 482. Chrysodomus rectirostris, n. s. Small, white, smooth, with straight canal.
  483. Fusus ambustus, Gld. Otia. Close to clavata, Brocchi, from Mediterranean.
- Farallone Is. teste Darbishire; 16 fm. c. Cp.
  484. Macron Kellettii, A. Ad. P. Z. S. 1853, p. 185. Large, with blunt keels. Dead, 60 fm. Cat. Is. Cp.
- 485. Macron lividus, A. Ad. Small, smooth.
  486. Anachis subtravita, n. s. Aspect of small Rissoina. 20 faint ribs: no spiral sculpture.
- 487. ? Anachis penicillata, n. s. Small, with Metuloid sculpture. Beach-10 fm. Cp.

#### Class CEPHALOPODA. Family Argonautida.

- 488. Argonauta Argo, Linn. auct. Like the Mediterranean form. Hundreds on Sta Cruz Is. Cp. Family Octopidæ.
- 489. Octopus punctatus, Gabb, Proc. Cal. Ac. 1862, p. 170. S. Clemente Is. Cp.

# Family Loligida.

- Ommastrephes giganteus, D'Orb. Peru. Common at S. Clemente Is. Cp.
   Ommastrephes Ayresii, Gabb, Proc. Cal. Ac. Hundreds on S. Clemente Is. Cp.
   Onyckoteuthis fusiformis, Gabb, Proc. Cal. Ac. 1862, p. 171. "Cape Horn, Mus. Ac." S. Clemente Is. Cp.
- 113. It remains to tabulate the shells which have been received from special localities, south of the State of California, either by the writer or by the Smithsonian Institution; vide Br. Assoc. Rep., par. 77.

The promontory of Lower California has been so little explored, that the existence of a large inland fiord, in lat. 28°, was not known to the authorities. It appears that the whales have long delighted in its quiet waters; and those whalers who were in the secret carefully preserved the exclusive knowledge of so profitable a hunting-ground. All that we know at present of the molluscs of that region is from collections made at Cerros Island, by Dr. Ayres and Dr. Veitsch. They are mostly shore shells, and are sadly intermixed with an abundance of cowries, cones, strombs, and other clearly Pacific species, which throw great doubt upon those which may be truly from the coast. As it is manifestly a "hotbed of spurious species," nothing can safely be built upon the data, which present a singular intermixture of northern and southern forms. Excluding the Central Pacific importations, the lists stand as follows, the temperate species being distinguished (as in the tirst Report) by a *, the tropical by a †:-

```
Sanguinolaria Nuttalli,
*Macoma secta.
  Angulus Gouldii.
*†Heterodonax bimaculatus.
 Donax Californicus.
 †Donax punctatostriatus.

*Standella ?Californica.

    Pachydesma crassatelloides.

*†Amiantis callosa.
 *Chione simillima.
 †Chione neglecta.

*Tapes staminea, Conr.
 †Tapes grata and vars.
 *Lucina Californica.
  Lucina bella

    Mytilus edulis. (One young specimen,
perhaps from San Francisco.)

 *Septifer bifurcatus.
 †Pecten subnodosus, ventricosus.
 *Pecten monotimeris and vara.
 *Hinnites giganteus.
*†Ostrea conchaphila.
*†Anomia ?lampe.
  Siphonaria sequilirata.
*†Melampus olivaceus.
  Helix arrosa.
*†Bulla nebuloss
*†Ischnochiton Magdalensis
 *Acmæa persona, var. textilis.
 *Acmses scabra, var. limatula.
 *Acmæa ?spectrum, jun.
 Lottia gigantea.
 *Lucapina crenulata.
 •Fiesurella volcano.
 *Haliotis splendens
 *Haliotis Cracherodii.
 Pomaulax undosus.
```

Callopoma tessellatum = Fokkesii.

Trochiscus Norrisii. Omphalius l'fuscescens. *Omphalius aureotinctus. †Crucibulum imbricatum. *†Crucibulum spinosum †Crepidula arenata and var. †Cerithium uncinatum. *Cerithidea pullata. †Cerithidea Montagnei. *Litorina planaxis. Luponia sp. ind., jun. †Trivia Solandri. Trivia Californica. Drillia penicillata. Myurella, sp.
*†Neverita Recluziana. †Natica Maroccana. •Scalaria (Ind. var.) tincta. †Bezoardica abbreviata. †Leucozonia cingulata. †Strigatella tristis.
*Olivella biplicata. *Purpura ostrina, vara. †Purpura biserialis. Monoceros lugubre. †Vitularia salebrosa. Cerostoma monoceros. Ocinebra Poulsoni. Chorus Belcheri. †Columbella fuscata.
*Columbella carinata. †Strombina gibberula. †Anachis coronata. †Nassa tegula. †Nassa complanata. Macron Kellettii. Macron lividus.

The shells of Margarita Bay, on the Pacific coast of Lower California, in lat. 24°, have become known through W. Harper Pease, Esq., of Honolulu, Sandwich Islands. Through his labours we are likely soon to be favoured with accurate accounts of the distribution of species in the various parts of the Pacific Ocean. Already his researches have greatly enriched our knowledge of the quaint fauna of the Sandwich Islands, from which he has eliminated the spurious species, and added those erroneously ascribed to California by previous naturalists. The principal trade from these islands is with San Francisco; and "the coast," in Ma Pease's writings, signifies the coast of California or (generally) of Western America. Many of our best specimens of rare West-coast shells have been received from him, and in remarkably fresh preservation. The Margarita Bay species were obtained by one of his trained collectors, and are as follows:—

Martesia intercalata. Saxicava pholadis Solecurtus violascena. Hiatula compacta. Tellina secta. Strigilla carnaria (pink). Semele Californica. Donax punctatostriatus.
Dosinia ponderosa.
Callista chionæa.
Callista vulnerata (?=tricolor, Pw.).
Chione succincta
Chione gradia.
Tapes grata.

"Tapes staminea. Chama frondosa. Cardium procerum. Liocardium elatum. Modiola capax. Modiola Brasiliensis. Lithophagus attenuatus. Barbatia gradata. Pecten ventricosus. Ostrea Virginica (Maz. Cat.). Ostrea lurida, var. Ostrea conchaphila. Ostrea amara. Siphonaria sequilirata (=leviuscula, Sby., teste Cuming). Siphonaria gigas. • Helix areolata, Fbs. (The only landshell received from the Bay.) Dentalium tetragonum, Sby. Dentalium semipolitum. Dentalium lacteum, Ihil. Acmæa strigatella. Acmæa atrata. Gadinia reticulata. Calliostoma versicolor. *Chlorostoma gallina. *Chlorostoma aureotinctum. Nerita scabricosta. Nerita Bernhardi. Crucibulum spinosum. Crucibulum imbricatum.

Crepidula onyx. Crepidula excavata. Galerus conicus. Cerithium stercus muscarum. Pyrazus incisus and var. Rhinoclavis gemmata. Cerithidea Mazatlanica. Litorina fasciata. Litorina aspera, var. Conus "reticulatus" (Pease). Dead. Conus "emarginatus" (Pease). Dead. Conus interruptus. Neverita Recluziana Polinices bifasciata. Cancellaria urceolata. Cancellaria goniostoma. "Cypræcassis testiculus" [perhaps tenuis]. Malea ringens. Priene nodosa Oliva subangulata. Oliva porphyria. Purpura patula. Purpura biserialis. Purpura ostrina. [Normal, living.] Vitularia salebrosa. Monoceros lugubre, var. Cerostoma monoceros. Nassa tegula. Siphonalia anomala. Phyllonotus nigritus.

In the above list, the only strictly Californian species are those marked

The following species have been received from La Paz, besides those tabulated in Major Rich's list, p. 541, in the C. S. L. list, p. 619, and the B. A. Rep. p. 352. It is clear that the fauna of the district is essentially tropical, and remarkably free from Californian species.

Dentalium semipolitum. Turritella punctata. Modulus cerodes.

Olivella fulgida, Lieut. Trowbridge [teste W. Cooper; but probably added by him accidentally from his W. African collections. It has not been received from any other West-coast source]. Siphonalia modificata. Dead.

A very interesting series of shells were collected at Guaymas and Pinacati Bay, by Capt. Stone and Mr. Sloat. The latter gentleman affixed MS. names to those which he regarded as new. They were in remarkably beautiful condition, the bivalves having an unusually porcellanous aspect, and many of the species presenting local peculiarities.

Mulinia carinulata, Desh.,= Mactra modesta, Sloat MS.

Very large.

Dosinia ponderosa. Very large. Chione fluctifraga, Sby.,= V. Cortezi, Sloat MS. [=gibbosula (Desh.), Rve.,= callosa, Sby., non Conr.].

Chione succincta, Val., = Californiensis, Brod., = V. crassa, Sloat MS. [Very variable in sculpture; also, with the last, varies greatly in shape, some of the specimens being much produced, others rounded.]

```
Chione pulicaria, Sby., var., = V. Pinacatensis, Sloat MS. Sculpture pressed
   smooth in the middle.
Cardium elatum. Fine.
Cardium procerum. Fine.
Modisla capax. "Choros." Also Sta. Iñez Bay.
Modiola Brasiliensis. (Typical.)
Byssoarca Pacifica.
Ustrea conchaphila et amara, Maz. Cat. 215.
Chiton (Lophyrus) Stokesii. Also San Salvador, Capt. Dow.
Callopoina Auctuatum.
Bivonia contorta.
Turritella goniostoma.
Turritella tigrina (light var.),= leucostoma, Val.
Cerithidea albonodosa. Common. [Probably a var. of Mazatlanica.]
Strombus gracilior. Also Mulege Bay.

Neverita Recluziana. [Operc. strong, horny.]

Ranella trique; ra. [Operc. sub-Buccinoid, oval; nucleus internal, near middle of labrum; scar with few ridges, as in Rurpura.]
Oliva angulata. Not rare.
Oliva Cumingii, very callous var.
Agaronia testacea.
Monoceros lugubre. Very tall var.

Phyllonotus nigritus. Very large, of form described by Philippi, with Pholads
   in situ. Agiobampo Bay.
Phyllonotus bicolor. [Operc. thin, without frills or raised layers; of uniform colour.] Also Angeles Bay.
```

To those may be added, from a second voyage by Capt. Stone to the sorthern part of the Gulf of California, and in equally good condition—

```
Arca grandis. Agiobampo Bay.
Callista semilamellosa. Agiobampo Bay.
Lazaria pectunculus (teste Cuming). St. Luis Bay.
Cardium consors. St. Luis Bay.
Avicula Peruviana. Mulege Bay.
Lucina tigerrina. Very fine. San Marcos Island.
Margaritiphora fimbriata. "Topo."
Janira dentata [= excavata, Val.]. "Caballito del mar," St. Luis Bay.
Bulla nebulosa. "Huevitos."
Glyphis inæqualis. St. Luis Bay.
Crucibulum imbricatum. St. Luis Bay.
Crypræa eranthema. (Large.) Cape de Haro.
Myurella variegata. Mulege Bay.
Solarium granulatum et var. quadriceps. Agiobampo Bay.
Polinices bifasciata. Angeles Bay.
Cypræcassis tennis [= Marsenæ, Kien.]. Carmen Island.
Harpa crenata. Very fine. Mulege Bay.
Bezoardica abbreviata. Mulege Bay.
Ficula decussata. Angeles Bay.
Pyrula patula. Agiobampo Bay.
Malea ringens. Lobos Island.
Argonauta hians. 1 fine sp. Upper part of Gulf of California.
```

To the Guaymas fauna must be added, from Dr. Gould's portion of the same collection, "Pecten pyxidatus" [?=subcrenatus, jun.). Also from the collection of the Calif. Ac. Nat. Sc., Nassa nodocincta, A. Ad. [Galapagos, Cuming]. On comparing these lists with the shells given in B. A. Rep. p. 352 (in which the Venus quoted is not "staminea, Conr.," but a southern species). it will be seen that the fauna of the upper part of the Gulf, as far north as it has been explored, is essentially tropical. The Chione fluctifraya

and C. succincta, however, and the Polinics Recluziana indicate a connexion with California which may have been, at a previous age, more direct than at present.

114. (See first Report, pars. 79-83.) Acapulco being notorious for the exotic species quoted in its fauna, it is desirable to examine all authentic collections from that prolific locality. The Smithsonian series were obtained by Dr. Newberry (N.), after his Pacific R. R. Explorations (vide p. 593); by Mr. Belcher (B.); and by the Rev. J. Rowell (R.), who obtained them principally from the valves of the large oysters. The private collections of Judge Cooper, Col. Jewett (J.), and other American naturalists have also afforded valuable information. The species from these various sources, which were also found by Mr. Xantus, are tabulated with his Cape St. Lucas series, anted, pp. 619-626. The following have not been obtained from the northern localities:—

Corbula nuciformis, J. Corbula ovulata, and smooth var., B., J. Machera patula, var., N. [Surely imported. Sanguinolaria miniata, J., N., D. Tellina princepe, B.; punices, N., B.; opercularis, N. Strigilla carnaria, pale and crimson vars., Semele proxima, J.; pulchra, J., N.; venusta, J. Donax carinatus, J., N.; rostratus, J.; transversus, N Trigona Hindsii, J. Mactrella carinata, Lam., = alata, Spengl., N. [Perhaps imported.] Dosinia Annæ, N. Callista circinata, J.; semilamellosa, N., B.; spinosiasima, B. Chione amathusia, N. Rupellaria foliacea, R. Petricola ventricosa, R. Chama corrugata, R. Cardium Paculeatum, jun., N. [probably from ballast]; graniferum, N. Lucina Ppectinata, var., J. [More like imbricatula, W. I.; perhaps Jamaican.] Diplodonta semiaspera, R. Felania tellinoides, var., J. [More like subglobosa, W. I.; perhaps Jamaican.] Corbicula ?convexa, 1 worn valve, N. Scapharca bifrons, N.; labiata, B. Noetia reversa, J., B. Argina brevifrons, N Axinea parcipicta [=multicostata], J., N.; pectenoides, J.; insequalis, J. Lima angulata, J. Ostrea megodon [P.Z.S. 1845,p. 108], N. Anomia lampe, J.

Tornatina infrequens, B. Dentalium ?hexagonum, var., B. Fissurella nigropunctata, J.; ?macrotrema, J.; alba, jun., B. (1 worn sp.)
Calliostoma lima, var. æquisculpta, N.; Leanum, J. Senectus squamigerus, J. Galerus conicus, N.; mamillaris, N. Crepidula nivea, R.; incurva, N. Turritella Banksii, N.; leucostoma, B. Ampullaria Columbiensis, R. [West Mexico; locality uncertain.] Truncatella Bairdiana, B. Radius avena, J. Cypræa exanthema, N. Luponia fimbriolata, Beck, N. [Probably imported, and perhaps an imperfectly developed form of semipo-lita, Migh.] Terebra tuberculosa, N.
Drillia incrassata, B.; eburnea, n. s.,
R. [W.Mexico; locality uncertain.] Mangelia subdiaphana, J. Conus interruptus, Br. & Sby., B.; mahogani, N.; puncticulatus, N. Eulima hastata, R. Eulima, like yod, R. Eulimella, sp. (worn), B. Chemnitzia tenuilirata, B. Fasciolaria, sp. [size of tulipa, but with row of knobs and serrated lip], N. Latirus castaneus, N. Volvarina ffusca, J. [More regularly cylindrical than the W. I. specimens, broader in proportion near suture and at base, spire much shorter; but locality uncertain.

1 Valietta, B. 1 worn sp. [proba-Oliva Julietta, B. 1 worn sp. [probably imported]; ?kaleontina, dead, N.

The collections of Dr. Newberry passed principally into the hands of Dr. E. Foreman, late of Washington, who kindly presented a series to the Mus. Smiths.

Acaronia testacea, N.
Rhizocheilus madreporarum. 2 living sp. on coral, J.
Columbella uncinata, J.; humerosa, n. a., R.; varians, var., N. [?Imported from Sandw. Is.]

Nassa collaria, N.; ambigua, Mont., teste Hanl., N. [Probably imported from W. I.]
Anachis coronata, N.; Californica, J.
Muricidea alveata, J.
Phyllonotus brassica, N.

The following species are part of a collection received at the Smithsonian Inst. from Real Llejos, and fill up gaps which existed in the Central American fauna at the time of the first Report:—

Discina Cumingii.
Trigona Hindsii.
Hemicardium obovale.
Crassatella gibbosa.
Kellia suborbicularis.
Barbatia mutabilis.
Noëtia reversa.
Axinsaa Finulticostata.
Fissurella rugosa.
Phasianella perforata.
Omphalius viridulus.
Hipponyx barbatus.

Cæcum liratocinctum.
Cæcum læve.
Cerithium interruptum, var.
Barleeia subtenuis.
Aricia punctulata.
Terebra strigata.
Cerithiopsis assimilata.
Triforis alternata.
Olivella gracilis.
?Nitidella millepunctata.
Northia pristis.
Pisania sanguinolenta.

The collections received at the Smithsonian Inst. from Panama consist, in the main, of species already tabulated from that region. The following, however, are new to that well-searched portion of the fauna:—

Tellina striata (teste Cuming), Rowell, Pease.
Tellina (Angulus) amplectans, n. s., Rowell, Pease.
Adula stylina.
Californian species: either ballast or error in numPecten aquisulcatus, jun. | bering: Rowell.
Litorina. Small spotted species, n. s., teste Cuming, but appears identical
with the W. Indian: probably imported: Rowell.
Fluminicola, sp., Rowell.
Drillia albolaqueata, n. s., Rowell.
Natica catenata, Rowell.
Cuma costata, Rowell.

115. The Pulmonates of the Pacific slope have not formed a special study with the writer of this Report, as they were already in the abler hands of Messrs. Binney, Bland, and other eminent Transatlantic naturalists. The opinions of Mr. Binney as to synonymy, &c., with descriptions of new species and details of those previously known, were given in papers published in the 'Proc. Ac. Nat. Sc. Phil.' as follows:—" Descriptions of American Land Shells," Feb. 1857; "Notes on American Land Shells," Oct. 1857, May 1858, Nov. 1858, July 1859: and also in the 'Proc. Bost. N. H. S.,' "Description of two supposed new species of American Land Shells," Apr. 1857. These are embodied in 'The Terrestrial Air-Breathing Molluscs of the United States and the adjacent Territories of North America,' vol. iv., by W. G. Binney, Boston, 1859. It was first printed in the 'Boston Journal of Natural History,' vol. vii., and is intended as a Supplement to the great treatise by his father, vols. i.-iii., on the same subject. It is impossible to speak in too high terms of commendation of the manner in which this work has been prepared and executed, and of the beautiful figures drawn by Otto Köhler. The more matured views of the author were embodied in the Check-List of the Terrestrial Gasteropoda of North America, published by · Köhler. the Smithsonian Inst., June 1860, of which a second edition was soon issued. The species were divided into three series,—(1) those of the Pacific coast,

from the extreme north to Mazatlan; (2) those of eastern N. A., from the boreal regions to the Rio Grande; (3) those found in Mexico, to which sixteen from the first series are added. The freshwater Pulmonates are catalogued by the same most industrious author, in the 'Check-List of the Fluviatile Gasteropoda of N. America,' which contains the Melaniada, Paludinida, Ampullariada, Valvatida, and Limnaida; the West Coast species being distinguished by the letter W, and the Mexican by M. Mr. Binney next undertook a monograph of the Paludinide, &c., the proofs of which were widely distributed in 1862. Afterwards, assisted by the extensive series of specimens received from the Smithsonian Museum, and with access to those of the principal public and private collections in the U.S., and with the benefit of Say's types preserved in the Acad. Nat. Sc. Phil., he prepared a preliminary synopsis of the Limnæidæ, with full synonymy, proofs of which were issued by the Smithsonian Inst., May 4th, 1863. Last of all, under date Dec. 9, 1863, the Smithsonian Inst. has distributed proof copies of a complete 'Synopsis of the Species of Air-Breathing Molluscs of N. A., as eliminated from their synonyms by Mr. Binney's. Of all these works the author not only sent the earliest slip-proofs to assist in the preparation of this Report, but in several instances took the pains to write separately what related to the W. coast, and even sent the manifold-duplicate of part of the printer's copy. It is not considered necessary to tabulate each of these publications separately, as they can easily be obtained by post, on application to Professor Henry, Washington, D.C. The following list embodies—(1) the classification and nomenclature of Dec. 9th, 1863; (2) the synonymy as given in previous synopses; and (3) the localities and authorities supplied by Mr. Binney in The following reservation requires attention:- "As a mere proof, which will undoubtedly receive many corrections, this list should not be quoted as authority, or referred-to as a published work."

Mr. Binney's Arrangement of the West Coast Pulmonates.
† The species thus marked have not been seen by Mr. Binney.

## PHANEROPNEUMONA.

ECTOPHTHALMA. (None known in the region.)

OPISTHOPHTEALMA. Fam. Truncatellide.

 Truncatella Californica, Pfr., + T. gracilenta, Gld. S. Diego, Cooper. [Comp. Maz. Cat. no. 423.]

## PULMONATA.

GEOPHILA. § 1. Vermivora. Fam. Oleacinida.

- †2. Glandina (Glandina) turris, Pfr. (= Achatina = Oleacina, Pfr.) W. Mexico.
  Maz. Cat. no. 231.
- 3. Glandina (Glandina) Albersi, Pfr. (= Achatina, Pfr.).,+G. Albersi, var. turrita, Cpr. W. Mexico. Max. Cat. no. 230.
- The first Transatlantic attempt to revise the genera of N. A. Helicidæ was made by Mr. Bland, in his "Remarks on Classifications of N. A. Helices by European authors, and especially H. and A. Adams and Albers," printed in the 'Annals of the Lyceum of Nat. Hist. N. York,' Oct. 1863. In an addendum, he gives a list of the Pacific species, with an account of two "genera" not represented in the eastern division. Mr. Binney, continuing Mr. Bland's labours, issues the species for the most part in the trinomial nomenclature, which now appears to be taking the place of the Linnean binomial system. No attempt is here made to review the work, as the writer felt justified in doing with reference to marine shells; the only alterations made consisting of corrections in some of the citations with which he happened to be more familiar.

### § 2. Phyllovora. Fam. Helicida.

### Subfam. Vitrininæ.

Vitrina Pfeifferi, Newc. Carson Valley, Cal., Newcomb.
 Binneya notabilis, Cp. Catalina Island, Cal., Cooper.

Macrocyclis Newberryanu, Bin. S. Diego, common, Newberry.
 Macrocyclis Vancouverensis, Lea, Helix V., Lea, Trosch., Pfr., Gld., Rve., H. vellicata, Fbs., Rve., Pfr., + H. concava, Binn. Vancouver to California:—Columbia R., Nuttall, U. S. E. E.; Puget Sound, U. S. E. E.;

Vancouver, B. N. P. B. S.; Oregon City, Newberry; California, Trowbridge;

St. Joseph's R., 2nd Camp.

7b. Macrocyclis [?var.] sportella*, Gld. Puger Sp. to S. Diego:—Puget Sd.,

U. S. E. E.; Fort Umpqua, Oregon; S. Diego, Ives, Newberry; S. Francisco,

Mus. Cal. Ac.; Contra Costa Co., Thomson. "Animal solitary."

### Subfam. Helicinæ.

P. Helix (Patula) strigosa, Gld. INTERIOB BASIN; N. MEXICO TO BRIT. AN.:
—Int. of Oregon, U. S. E. E.; Cañon Largo, Rio Pedro, N. M., Newberry.

9. Helix (Patula) Cooperi, Bin. California. 10. He'ix (Patula) Mazatlanica, Pfr. Mazatlan.

- 11. Helix (Polygyra) acutedentata, Bin., + H. Loisa, Bin. Guaymas. Mazatlan, Gambel.
- 12. Helir (Polygyra) ventrosula, Pfr. [No locality given: not "W." in Check-Lists.

- Helix (Polygyra) polygyrella, Bland. "W." [teste Check-List, not in MS.]
   Helix (Stenotrema) germana, Gld. Oregon, U. S. F. E.
   Helix (Triodopsis) Mullani, Bland. Washington Territory and Oregon: -St. Joseph's River, 1st Camp.
- 16. Helix (Triodopsis) luricata, Gld., Pfr., = H. Lecontei, Lea. Sacramento River, U. S. E. E.
- Helix (Mesodon) Columbiana, Lea, Trosch., Rve., Pfr., + H. labiosa, Gld., Pfr. VANCOUVER TO OREGON:—Ft. Vancouver, Natlall; Ft. George, U.S. E. E.;

Nootka Sound, Hinds; Astoria, Drayton; Oregon City, Newberry.

18. Helix (Mesodon) devia, Gld., Pfr., = H. Baskervillei, Pfr., Rve. Puget Sound, U. S. E. E.; Oregon.

Helix (Aglaia) fidelis, Gray, Müll., Rve., Pfr., = H. Nuttalliana, Rve., Trosch., Gld. Vancouvre to Oregon: —Puget Sound, Columbia River, U. S. E. E.; Esquimault Harb., Lord; Umpqua Valley, Or., and San Francisco, Newberry; De Fuca, Gibbs; Oregon City, Shumard; Ft. Steilacoom, Suckley.
 Helix (Aglaia) infumata, Gld. San Francisco, Bigelow.
 Helix (Arianta) arrosa, Gld., = H. æruginosa, Gld. (nom. preoc.). Oregon, Calvantal arrosa, Gld., = H. æruginosa, Bld.

- CALIFORNIA: -San Francisco, Bigelow, Samuels; Petaluma and Columbia
- River, Newberry.

  22. Helix (Arianta) Townsendiana, Lea, Trosch., Rve., Pfr., Gld., + H. pedestris + ruida, Gld. Oregon and California:—Wahlamat River, Nuttall, +ruida, Gld. Oregon and California: —Wahlamat River, Nuttall, Townsend, U. S. E. E.; Nisqually, Dyes.; Puget Sound, Kennerley.

  23. Helix (Arianta) tudiculata, Binn. Washington Territory to California:

-San Diego, Newberry.

24. Helix (Arianta) Nickliniana, Lea, = H. Californiensis, Rve., Pfr. (non Lea), = H. arboretorum+nemorivaga, Val.—Var. = H. anachoreta, Binn. "Widely distributed, but solitary," Thompson. California:—Sacramento River, U. S. E. É.; San Francisco, Bigelow; Tomales, Newberry.

25. Heliz (Arianta) redimita, Binn. (jun.),=H. Nickliniana, var. Binn. (sen.). California.

In the Check-List of Dec. 9th, sportells does not appear. It is generally treated by Mr. Binney as a small variety of Vancouversusis, with stronger radiating and spiral lines; but in the MSS. sent for publication in this Report it takes rank as a species. Mr. Bland considers the two identical; yet in Add. Gen. the form is thus divided:—"Iberus (Campylan) sportella, in fam. Helicida," and "Discus Vancouverensis, in fam. Stenopida." In Albers it is divided as "Macrocyclis nellicata," "M. Vancouverensis," and "Helian is divided as "Macrocyclis nellicata," (Patula) sportella."

157

- 28. Helix (Arianta) intercisa, Binn. (jun.),= H. Nickliniana, var. Binn. (sen.).
- †27. Helix (Arianta) exarata, Pfr. California.

- †28. Helix (Arianta) reticulata, Pfr. California.
  †29. Helix (Arianta) reticulata, Pfr. California, Newcomb.
  †30. Helix (Arianta) Ayresiana, Newc. Northern Oregon.
  †31. Helix (Arianta) Bridgesii, Newc. San Pablo, California, Newcomb.

- 131. Acsix (Ariania) Briagessi, Newc. San Pablo, California, Newcomb.
   132. Helix (Ariania) Carpenteri, Newc. Tulare Valley, California. [Not Carpenteriana, Bland; Florida.]
   33. Helix (Ariania) Californiasis, Lea, Trosch., Dekay (non auct.),=H. vincta, Val., Rve., Pfr. California:—Interior of Cal, U. S. E. E.; Monterey, Ives.
   134. Helix (Ariania) Mormonum, Pfr. Mormon Is., California.
   35. Helix (Ariania) Dupetithouarsi, Desh., Rve., Pfr., + H. Oregonensis, Trosch., Dekay, Pfr. Washington Territory to California. Interior of Cal., U. S. E. R.: Puret Sound. Dues. Klamath Laka and Reniais Nanhama. U. S. E. E.; Puget Sound, Dyes.; Klamath Lake and Benicia, Newberry; Tulan Lake, Cal.; Monterey, Trowbridge; San Diego, Ives. †36. Helix (Arianta) Traskii, Newc. Los Angelos, California, Newcomb.
- 37. Helix (Arianta) Kellettii, Fbs., Rve., Pfr. Sta. Barbara, Kellett and Wood; San Diego, teste Gould.
- 38. Helix (Arianta) Pandoræ, Fbs., Rve., Pfr.,=H. damascenus, Gld. Sta. Barbara, Kellett and Wood; Desert East of California, Mus. Newcomb.
- Helix (Arianta) levis, Pfr., + var. β. Columbia River.
   Helix (Euparypha) areolata, Sby., Pfr., Phil., Rve., + vars. β. γ. PENINSULA OF LOWER CALIFORNIA. [Margarita Bay, Pease.*]
- †41. Columna (Rhodea) Californica, Pfr. [Achalina, Pfr., Rve.]

#### Subfam. Orthalicinæ.

- 42. Bulimulus (Liostracus [not Leiostraca, Add.]) Ziegleri, Pfr. Mazatlan, Reigen. [†43. Bulimulus Mexicanus t, Lam., Deless., Pir., Rve. (non Val.),= Cochlogena
- vittata, Fér. Mazatlan, Reiyen.]
  44. Bulimulus (Mesembrinus) pallidior, Sby.,=B. vegetus, Gld., teste Cum., Binn. SAN DIEGO TO CAPE ST. LUCAS:-C. S. LUCAS, Xantus.
- 45. Bulimulus (Mesembrinus) excelsus, Gld. (text),= B. elatus, Gld. (fig.). SAN DIRGO TO CAPE ST. LUCAS:—C. S. Lucas, Xantus.
- 46. Bulimulus (Mesembrinus) inscendens, Binn. LOWER CALIFORNIA: Margarita Bay, and C. S. Lucas, Xantus. †47. Bulimulus (Thaumastus) Culifornicus, Rve.
- †48. Bulimulus (? Mormus) sufflatus, Gld., = B. vesicalis, Gld. (nom. preoc.). Lower CALIFORNIA.
- 49. Bulimulus (? Mormus) pilula, Binn. Lower California:—Todos Santos Mission, Margarita Is., Xantus.

- 50. Bulimulus (Scutalus) proteus, Brod. Cape St. Lucas, Xantus.
  51. Bulimulus (Scutalus) Xantusi, Binn. Cape St. Lucas, Xantus.
  52. Bulimulus (Peronæus [non Peronæa, Poli]) artemisia, Binn. Cape St. Lucas, Xantus.
- 53. Orthalicus (Orthalicus) zebra, Müll., Pfr. Mazatlan, Reigen. Also Eastern 53b. Orthalicus (Orthalicus) undatus, Fér., Pfr. § "Mazatlan." slope. 53b. Orthalicus (Orthalicus) undatus, Fér., Pfr. § "Mazatlan."

### Subfam. Pupine.

- †54. Pupa (Pupilla) Rowellii, Newc. San Francisco, Rowell.
- †55. Pupa (Pupilla) Californica, Row. San Francisco, Rowell. 56. Pupa (Leucochila) chordata, Pfr. Cinaloa, Mexico.
- * See also Dr. Newcomb's new species, tabulated in pp. 609, 633.

  † Included among the doubtful species by Mr. Binney; but the shell so named in the Maz. Cat., no. 234 (perhaps erroneously), was certainly found on opening the Mazatlan boxes by Mr. Archer.
- § Mr. Binney follows Pfr., in his later works, in separating these ? varieties. The shells in the Reigen Collection were clearly conspecific. Vide Mas. Cat., no. 232.

### Subfam. Succinina.

†57. Succinea (Succinea) Haukinsi, Baird. British Columbia, Lord.
†58. Succinea (Succinea) cingulata, Fbs. Mazatlan, Kellett and Wood.
59. Succinea (Succinea) rusticana, Gld. Oregon and California:—Oregon,
U. S. E. E.; Ocogo Creek, California, Williamson.
60. Succinea (Succinea) Nuttalliana, Lea. "Scarcely differs from S. ovalis, Hudson
River," Gld. Oregon and California:—Lewis's River, Or., Nuttall; In-

terior of Oreg., U. S. E. E.; Wright's Lake, Rhell's Lake, Cal., Newberry.

G. Succinea (Succinea) Oregonensis, Lea. "Resembles S. aurea," Gld. Oregon
AND CALIFORNIA:—Oregon, Nuttall. San Francisco, Rowell.

#### Subfam. Limacina.

62. Limax ‡ (Amalia) Columbianus, Gld. PUGET SOUND TO SAN FRANCISCO:—Puget Sound, U. S. E. E., Dyes; Oregon City and Cape Flattery, Williamson; San Francisco and Port Oxford, Troubridge; Nisqually, Case.

#### Fam. Arionida.

## Subfam. Arionina.

63. Arion (Lochea) foliolatus, Gld. Puget Sound, U. S. E. E., Pickering.

### Subfam. Zoniti væ.

64. Zonites § (Ægopis) cultellata, Thoms. "Closely resembles the Dalmatian H. albanica and acies." Contra Costa Co., Cal., common, Thomson.

#### Fam. Onchidiadæ.

65. Onchidium Carpenteri, Binn. Cape St. Lucas, Xantus.

## LIMNOPHILA. Fam. Auriculidæ.

#### Subfam. Melampinæ.

68. Melampus oliraceus, Cpr. SAN DIEGO TO MAZATLAN:-Mazatlan, Reigen;

San Diego, Blake, Cooper.
67. Pedipes lirata, Binn. LOWER CALIFORNIA:—C. S. Lucas, Xantus; San Diego, Cooper.

## Fam. Limnæidæ.

## Subfam. Limnæinæ.

68. Limnæa (Limnæa) stagnalis, Linn., + L. jugularis, Say, Hald., De Kay, Küst., Binn. (1st list), + L. appressa, Say, Hald., De Kay, Küst., C. B. Ad., + L. speciosa, Ziegl. EUROPE, ASIA, AMERICA:—Rhett Lake, California, Newberry; Ruby Valley and S. Utah, Captain Simpson. Fort Simpson and Hudson's

- Bay, common; throughout British America and northern tier of U. S., from Vermont to Pacific, teste Binn. [Var.=H. fragilis, Linn., teste Hanl., Ips. Linn. Conch. p. 385; non Rve., Binn. (1st list).]

  69. Limnæa (Limnæa) lepida, Gld. Lake Vancouver, U. S. E. E.

  70. Limnæa (Limnophysa) reflexa, Say, Hald., De Kay, Küst.,+L. elongata, Say, L. umbrosa, Say, Hald., De Kay, Küst.,+L. exilis+L. Haydeni, Lea. San Francisco, Rowell. Also through British America and northern tier of States from New York to Pacific; teste Binn.
- †71. Limnæa (Limnophysa) Sumassii, Baird ||.
- * So great is the difficulty of ascertaining (even approximately) the specific relations of Succisee without a comparison at least of single specimens, that Mr. Binney considers it safest, until series have been examined, simply to quote the species which have been described by other authors. He has followed the same course with Ancylus, and for the

- 1 "Has a pore. Why not Arion?"—Binney, in MS. list.
  5 This appears among "doubtful species" in the MS., but is printed in the text of the Check-List.
- Probably a variety of palustris = Nuttalliana, Lea. British authors have as yet had but poor opportunities of studying typically-named American freshwater Pulmonates, 1**ŝ63**.

72. Limnea (Limnophysa) palustris, Müll. et auct.,=L. fragilis (as of Linn.), Ha'd.,

De Kay, Binn. (1st list), Rve. (hodie). [Non Linn., teste Hanl. in Ips. Linn.
Conch., p. 385]. +L. elodes, Say, Gld., C. B. Ad., Küst.,+L. Nuttaliana, Lea, Küst., ?+L. plebeia, Gld.,+L. expansa, Hald., De Kay, Küst.
Northern Europe, Asia, and America:—Columbia River, Nuttali;
Puget Sound, Kennerley; Klamath Lake and Summer Lake, Or.; Rhett
Lake and Wright's Lake, Cal., Newberry: Clear Lake, Cal., Veatch: San
Francisco, Ronell; Monterey, Canfield; Porcupine and Yuckron Rivers, Rus.
America, Kennicott. Also from Pennsylvania westward to Pacific. and from America, Kennicott. Also from Pennsylvania westward to Pacific, and from this line northwards, wherever searched, even to interior of Russian America; teste Binn.

73. Limnæa (Limnophysa) proxima, Lea. San Francisco, Cooper. Arroya San Antonio, Trask.

- Limnæa (Limnophysa) emarginata, Say, Hald., De Kay, Küst.,=L. Outariensis, Muhlf., Küst.,+L. serrata, Hald. New England to Washington Ter-RITORY.
- Limmæa (Limnophysa) catascopium, Say, Hald., Gld., De Kay, Mrs. Gray Pot. & Mich., Küst., + L. pinguis, Say (non Dohrn), = L. Virginiana, Lam., Desh., Deless., = L. cornea, Val., = L. sericata, Ziegl. NEW ENGLAND TO LEWIS RIVER, AND THROUGH BRITISH AMERICA; teste Binn.

- Limnæa (Limnophysa) Adelinæ, Tryon. San Francisco.
   Limnæa (Limnophysa) Traskii, Tryon. Mountain Lake, California.
   Limnæa (Limnophysa) pallida, C. B. Ad., Hald., De Kay. San Francisco, Rowell; San Antonio Arroya, teste Lea.
- Limnæa (Limnophysa) bulimoides, Lea, Hald., De Kav. Fort Vancouver. San Francisco, Rowell. Also Eastern States. (Check-List.)
   Limnæa (Limnophysa) solida, Lea, Hald., De Kay, + L. apicina, Lea, Küst. Oregon. Also Eastern States. (Check-List.)
   Limnæa (Limnophysa) ferruginea, Hald., De Kay. Oregon.
   Pompholyx effusa, Lea, Add. Pitt River, Neuberry; Sacramento River, teste Lea.

- teste Les.
- 83. Physa (Physa) Lordi, Baird. British Columbia, Lord; east of Fort Colville, W. T., Am. N. P. B. Surv.
- Physa (Physa) gyrina, Sav, De Kay, Küst., C. B. Ad., Hald.,=Ph. elliptica, Lea, De Kay,+Ph. cylindrica, De Kay,+Ph. Hi drethiama, Lea. Washington Territory, Cantain Simpson; San Francisco, Rowell.
   Physa (Physa) ampullacea, Gld.,=Ph. bullata, Gld. (non Pot. & Mich.). Oregon, Cooper; Lakes Rhett and Upper Klamath, Newberry.
   Physa (Physa) Gabbii, Tryon. Sta. Aña Riv., Angelos Co. Also Mountain

Lake, California.

1. Ake, California.
87. Physa (Physa) heterostropha, Say, Gould, C. B. Ad., Desh., Küst., De Kay, Mrs. Gray, Pot. & Mich., Eaton, + Ph. fontana, Hald., + Ph. cylindrica, Newc., + Ph. aurea, Lea, De Kay, + Ph. plicata, + Ph. glabra, De Kay, + Ph. osculans, Hald. (part), + Ph. striata, + Ph. subarata, Mke., + Ph. Charpentieri, + Ph. Phillipii, Küst., + Ph. elliptica, + Ph. inflata, Lea, = Bulla crassula, Dillw., = B. fontinalis, Chemn., Schröter, = Cochlea nervioides, List. North America, passim: — Chiloncynck, Kennerley; Hell Gate River, Newberry; San Francisco and Washington Territory, Cooper; Los Angeles, teste Lea. Also from Texas to British America and Arctic regions, and from Atlantic to Pacific teste Binn to Pacific, teste Binn.

Physa (Physa) costata, Newc. Clear Lake, Cal., Veatch.
 Physa (Physa) virginea, Gld. San Francisco, Rowell.
 Physa (Physa) humerosa, Gld. Rio Colorado, Willamson; San Diego, P. R. R. E.

91. Physa (Physa) virgata, Gld. San Diego, Webb; Los Angelos; Cal. A. N. S.

several of which are perhaps but modifications of circumboreal species which have been already traced to Eastern Asia. Even the series in Mus. Cum. are far from being accurate or complete. The inflexible rules of the British Museum have not yet allowed a single specimen of Dr. Baird's species to be transmitted to America, even for comparison.

160

92. Physa (Physa) triticea, Les, Binn. MSS. California, Cooper.

193. Physa (Physa) concolor, Hald. Oregon.
94. Bulinus I (Bulinus) aurantius, Cpr. [=Aplexa, auct.: v. Maz. Cat. p. 179], = Ph. Peruviana, Mke. [non D'Orb.]. Mazatlan, Reigen.
95. Bulinus (Bulinus) elatus, Gld. Mazatlan, Reigen.
96. Bulinus (Bulinus) hypnorum, Linn., Hald., C. B. Ad., Chen. et auct.,=Ph.

elongula, Say, Gld., De Kay, = Ph. elongulina, Lewis. NORTHERN EUROPF. ASIA, AMERICA. Puget Sound, Cooper; common at junction of Yukron and Porcupine Rivers, Russ. Amer., Kennicott. Through Brit. and Russ. America, and from Kansas to Washington, D. C.; teste Binn.

## Subfam. Planorbinæ.

97. Planorbis (Planorbis) subcrenatus , Cpr. Oregon, Nuttall. [Puget Sound, Kennerley.

Planorbis (Planorbis) tumens, Cpr., = P. tenagophila, Mke. (non D'Orb.), = P. affinis, Cpr. [Cat. Prov., non C. B. Ad.] Mazatlan, Melchers, Reigen. San Francisco, Cooper; Petaluma, teste Gld.

- Planarbis (Planorbis) vermicularis, Gld.
   Planorbis (Planorbis) vermicularis, Gld.
   Planorbis (Helisoma) ammon, Gld., =P. Traskei, Lea. Klamath Lake, Or. and Rhett Lake, Cal., Newberry. Ocogo Creek, Cal., Williamson; Kern Lake, Cal., Cooper; Monterey Co., Trask; Lagoons, Sacramento Valley,
- Planorbis (Helisoma) corpulentus, Say, Hald., De Kay, Gld., Chenu, = P. tri-volvis (pars), C. B. Ad. Columbia River, abundant, U. S. E. E. Also Eastern States.
- 102. Planorbis (Helisoma) trivolvis, Say, De Kay, Gld., Hald., C. B. Ad., Küst., Pot. & Mich., Eaton = Bulla fluviatilis, Say, + Pl. regularis, Lea, + Pl. meyastoma + Physa planorbula, De Kay, + Pl. macrostomus + Pl. corpulentus, Whiteave, + Pl. lentus, Gld., + Pl. trivolvis, var. fallax, Hald., = Cochleat rium-orbium, Lister, Petiver. Puget Sd., Campbell; Wright's Lake, Cal., Newberry; I't. Vancouver, Cooper; San Francisco, Rowell; S. Diego; Mus. Smiths.; Horn Lake, teste Lea. Probably extense whole continent, teste Binn.

  103. Pianorbis (Menetus) opercularis, Gld., = P. planulatus, Coop. S. Francisco, U. S.

Expl. Exp.; Whidby's Is., Cal., Cooper.

104. Carinifex || Newberryi, Lea. Klamath Lake and Canoe Creek, Cal., Newberry; Clear Lake, Cal., Veatch.

## Subfam. Ancyline.

105. Ancylus Newberryi, Lea. Klamath Lake, Newberry. †106. Ancylus crassus, Hald. "W." [Check-List.]

- 107. Ancylus caurinus, Coop. California, Cooper.
  108. Ancylus patelloides, Lea. S. Francisco, Cooper; Arroya, San Antonio, Cal.,
  Mus. Smith.

†109. Ancylus Kootaniensis, Baird. Brit. Columbia, Lord.
110. Ancylus fragilis, Tryon. "W." [Check-List.]
111. Acroloxus Nuttalli, Hald. [Velletia N., Binn. in list, May 4th.] Oregon, Nutt.

112. Gundlachia Californica, Rowell.

- * So in first printed list and in two MSS.; but in Check-List of Dec. 9, Ph. Troostiana, Lea, is assigned to the West, instead of this species. The MSS. are probably correct.
- † Non Bulinus, Sby., olim,=Bulinus, auct. However clearly Bulinus, Binn., may be right according to the antiquaries, it is far too like Buliness, which has taken complete possession of the entire malacological world, to be allowed a resurrection in the same order. Surely burial for a given number of years ought to be allowed as evidence of death, especially if the infant-name scarcely even breathed the air of use, and its resurrection would breed malaria among terms thriving in the vigorous manhood of universal acceptance.

§ It is quite possible that this may prove a very finely grown specimen of *P. lentus*. Dr. Kennerley's shells are intermediate.

Thus in Check-Liet, Dec. 9th. In that of May 4th, it appears as Planorbis N.; in the MS. list as Carmifera.

#### Suborder THALASSOPHILA.

## Fam. Siphonariada.

†113. Siphonaria lecanium, Phil.: [Var. = S. maura, Sby. Var. palmata, Cpr., is possibly distinct. Mazatlan, E. B. Philippi, Reigen; Acapulco, Jewett; Cape St. Lucas, Xantus.]
†114. Siphonaria æquilirata, Cpr., [= S. æquilorata, Rve. Mazatlan, Reigen; C. S. Lucas, Xantus; Margarita Bay, very fine, teste Pease.]
†115. [Siphonaria thereites, Cpr. Neeah Bay, Swan.]

Doubtful, spurious, and extralimital species:-

Helix aspersa, Müll. "Sta. Barbara," Kellett and Wood. [Imported.] Helix arbustorum, Linn.

Helix Sagraiana, D'Orb. [Certainly Cuban.] Helix "Sandiegoënsis, Lea." Gld., P. R. R., vol. v. p. 331. "No such sp. described," teste Binney.

Helix peregrina, Bosc.

Bulimus Humboldti, Rve. P" Mazatlan."
Bulimus Laurentii, Sby. "Sitka:" probably Sitcha in San Salvador, teste Binney.

Melania [Bulimus] striata, Perry. [Vide anted, p. 520.]
Succinea aperta, Lea, = S. rotundata, Gld. Sandwich Is., U. S. Expl. Exp.
†Physa Maugeriæ, Gray, teste Woodward, Manual, p. 171; but probably equatorial S. America.

†Siphonaria amara, [Nutt. Admitted into the list by Mr. Binney, on the authority of Rve., as of Nutt.; but it lives on the Sandwich Is.; teste Pease, Newcomb, U. S. E. E.].

116. The Smithsonian Institution has lately issued a "Descriptive Catalogue of the species of Amnicola, Vivipara, Bithynia, Valvata, and Ampullaria," by Mr. W. G. Binney. It is abundantly illustrated with outlinewoodcuts, and contains the synonymy corrected from all the accessible types. Dr. Stimpson is at present engaged in dissecting the molluscs; but none of his investigations have yet been published. The following is a résumé of the West Coast species, from a proof kindly furnished by the author.

Page. Fig.

4.

6. Annicola longinqua, Gld., Bost. Proc. v. 130. Colorado Desert, Blake.
6. Annicola protea, Gld., Bost. Proc. v. 129. Colorado Desert, Blake, Webb.
45. Vivipara, Lam., = Paludina, Lam. [This genus, so fine and plentiful east of the Rocky Mountains, does not appear on the west.]

Paludina Nuttalliana, Lea, Trans. Am. Phil. Soc. vi. p. 101, pl. 23. f. 109. [In text. In later manuscript list, this name appears as a synonym of] Fluminicola (Stimps., MS.) Nuttallii, Lea, = Annicola Nuttalliana, Cp., **Tummicola** (Stimps., MS.) Nuttallii, Lea, = Amnicola Nuttalliana, Cp., Minn. Rep. p. 374, = Leptoxis Nuttallii, Hald., = Anculosus Nuttallii, Rve. P+ Paludina seminalis, Hds. (p. 46, f. 81), [P+P. Hindsii, Baird.] Columbia River, Nuttall, Cooper; Upper des Chutes Riv. and Klamath Lake, Or., Newberry; Roques R., Or.; Sacramento R., Hinds; Brit. Columbia, Lord; Canoe Creek and Pitt River, Cal., Newberry.

48. 80. Bithinia nuclea, Lea, = Paludina n., Trans. Am. Phil. Soc. vi. p. 91, pl. 23. f. 103 [in text. In later MS. list, appears as synonym of ] Fluminicola virens, Lea (Paludina v., Lea; Leptoxis v., Hald.), + Paludina nuclea, Lea. Wahlamat River, Oregon, Nuttall [Willamette, MS. list].

The following are added by Mr. Binney in his later MS. list:-

Valvate virens, Tryon. Clear Lake, Calif. [The Smithsonian duplicates have been unfortunately distributed under the name "V. sincera, Say," which had been previously given to the specimens, and under which they are quoted in the Check-List of 1860, no. 466. According to Mr. B., V. sincera is "like

ecarinate forms of V. tricarinata, Say," to which the Clear Lake specimens bear but slight resemblance.]

Fomatiopsis Binneyi, Tryon.

Fluministala fusca, Hald. (Leptoxis f.). Shores of Lake Utah, Capt. Burton.

117. Of the West Coast species of Melaniadæ we are unable to offer any list embracing the synonymy, as the materials are at present in the hands of Mr. Tryon for elimination, and his labours are not yet sufficiently advanced to furnish a report. His Manual of the North American Melaniadse will be published by the Smithsonian Institution. The animals of many species have already been dissected by Dr. Stimpson*. It is unfortunate that in the two most important branches of North American freshwater molluses, the Melaniadæ and the Unionidæ, there exists a radical difference of opinion between the leading writers, which has sometimes assumed the appearance of personal animosity. Malacologists east of the Atlantic, unwilling to become partisans when the leading nomenclators of the rival schools are equally honoured, have to a great extent declined to pay attention to the unexhausted riches of the American waters, regarding any settlement of the disputed points as hopeless. Dr. Isaac Lea, who has spared no expense in illustrating his publications of the results of a life-long study, follows the restrictions on the priority-rule allowed by the British Association Committee. Other writers, however, claim a certainty in identifying the supposed species of Rafinesque and other similarly inaccurate authors, which would be considered by most English naturalists as not warranted by the few loose words of description given. It would be well if the student were permitted to start from the first carefully ascertained landmark, rather than from the defaced tracks of the first hunter.

In the Check-List of North-American Fluviatile Gasteropods, published by the Smithsonian Institution, June 1860, which contains the names of 405 (supposed) species of *Melania*, *Lithasia*, *Gyrotoma*, *Leptoxis*, and *Io*, Mr. Binney assigns the following eleven to the West Coast. None of them are accredited to the eastern division.

 Melania bulbosa, Gld.
 Melania ezigua, Conr.
 Melania Menkeana, Les.
 Melania Newberryi, Les.
 Melania nigrina, Les. Clear Creek, Shasta Co.
 Melania plicifera, Les. 242. Melania Shastaënsis, Lea. Shasta and Scott Rivers.

243. Melania silicula, Gld. [= M. plicifera, small var., teste Lea.]

fera, small var., teste Lea.] 296. Melania Wahlamatensis, Lea. 297. Melania Warderiana, Lea.

360. Melania fueca, Hald.

118. Dr. Lea's Check-List of the Unionidæ (June 1860), after eliminating synonyms, assigns to America, north of Mexico, no fewer than 552 species of *Unio, Margaritana*, and *Anodonta*. The type-specimens of the species described by Dr. Gould from the United States Exploring Expedition were submitted to Dr. Lea's inspection, and confirmed his previous opinion that they were varieties of those before known. The *U. famelicus*, Gld., he pronounced to be a South-American shell; but it appears, without note, in the Check List, no. 133, probably by oversight. The only widely diffused species is the long-famed "pearl-mussel" of the Conway and other British streams. The following seven are accredited to the Pacific coast:—

^{*} See his very interesting and important paper "On the structural Characters of the socalled Melanians of North America," in the 'American Journal of Science,' vol. xxxviii., July 1864, pp. 41-53. It appears that the sexual system is quite distinct from that of the ordinary Ctenobranchiate Gasteropods, and approaches the Cyclobranchiates.

281. Unio Oregonensis, Lea [Comp. 584.] | 499. Anodonta Californiensis, Lea. 484. Margarilana margarilifera, Les. [Linn.]

531. Anodonta Nuttalliana, Lea. 534. Anodonta Oregonensis, Lea.

494. Anodonta angulata, Les.

551. Anodonta Wahlamatensis, Len.

Besides these, 36 species of Unio and Anodonta are assigned to Mexico and Central America in a separate list; but no distinction is indicated between the Pacific and the Atlantic slope of the mountain-range.

119. At the request of the Smithsonian Institution, Mr. Temple Prime, of New York, well known for his special devotion to this department, has consented to prepare a Manual of the Cyrenidæ inhabiting American waters. All the accessible materials from the West Coast are in his hands for examination. The first part of his "Monograph of the Species of Sphærium of North and South America" is printed in the 'Proc. Ac. N. Sc. Phil.' 1861, pp. 402 et seq., and contains quotations of five species, nos. 4, 7, 9, 10, 11, with synonymy, from Washington Ter., Oregon, and California. He has kindly (in advance of his intended publications) furnished to Mr. W. G. Binney the following MS. "Synopsis of the Corbiculidæ of the West Coast of North America," with liberty to publish in this Report. It is here condensed. with synonyms and references, in the nomenclature of the writer.

## Mr. Prime's List of West North-American Corbiculidæ [Cyrenidæ].

- Corbicula convexa, Desh., P.Z.S. 1854, p. 842, = C. ventricosa, Pr. MS. Mazatlan.
   Cyrena radiata, Hanl., P.Z.S. 1844, p. 159. Realejo.
   Cyrena solida, Phil., Abbild. 1846, p. 78, pl. 15. f. 9. Nicaragua; Belize.
   Cyrena triangula, V. de Busch, P.Z. S. 1849, p. 78, pl. 2. f. 3, = C. attilis, Gld.,
  Bost. Pr. 1852, p. 400, pl. 16. f. 5 bis, = C. Mexicana, pars, Maz. Cat., no. 165
- (= C. varians, cat. prov.). Mazatlan.

  5. Cyrena insignis, Desh., P. Z. S. 1854, p. 20; II. Conch. 1861, p. 39, pl. 2. f. 2. California

California.

6. Cyrena olivacea, Cpr., Maz. Cat., no. 164, = C. Fontainei, Desh., MS. (non D'Orb., B. M. Cat. no. 253). Mazatlan.

7. Cyrena acuta, Pr., Ill. Conch. 1862, p. 387, pl. 14. f. l. Centr. America.

8. Cyrena Mexicana, Sby., Zool. Il. 1829, p. 364 [Maz. Cat., no. 165 = ]C. varians, cat. prov. pars. + C. fragilis, Desh. MS. + C. æquilateralis, Desh., P. Z. S. 1854, p. 20. Mazatlan.

9. Cyrena Californica, Pr., Proc. A. N. S. Phil. 1860, p. 276, = C. subquadrata, Desh., P. Z. S. 1854, p. 21 (nom. preoc.). California.

10. Cyrena Panamensis, Pr., Proc. A. N. S. Phil. 1860, p. 283, = C. inflata, Desh., P. Z. S. 1854, p. 23 (nom. preoc.). Panama.

11. Cyrena Recluzii, Pr., = C. cordiformis, Recl., Il. Conch. 1853, p. 251, pl. 7. f. 9 (nom. preoc.). Centr. America.

12. Cyrena Cumingii, Desh., P. Z. S. 1854, p. 22. Centr. America.

13. Cyrena tumida, Pr., = C. angulata, Desh., P. Z. S. 1854, p. 22 (nom. preoc.). Centr. America.

- Centr. America.

Centr. America.

14. Cyrena pullastra, Mörch, Mal. Bl. 1860, p. 194. Realejo.

15. Cyrena maritima, C. B. Ad., Pan. Sh., no. 451. Panama.

16. Cyrena sordida, Hanl., P. Z. S. 1844, p. 159. Central America.

17. Sphærium triangulare, Say (Cyclas t.), New Harm. Dissem. 1829, p. 356. Mexico.

18. Sphærium striatinum, Lam. (Cyclas s.), An. s. Vert. vol. v. p. 560, 1818, = C. edentula, Say, loc. cit. p. 2, = C. cornea (Lam.). C. B. Ad., Cat., 1847, = C. albula, Pr., Bost. Proc. 1851, p. 155, + C. tensistriata, Pr., p. 156, + C. acuminata, Pr., p. 158, + C. inornata, Pr., + C. simplex, Pr., + C. modesta, Pr., p. 159. Hab.

N. York to Alabama, Connecticut to Illinois; Hell-gate River, W. T.

19. Sphærium dentatum, Hald. (Cyclas d.), Proc. A. N. S. Phil. 1841, p. 100. Oregon.

^{*} The name Corbicula, having been first given to a species, and being itself a diminutive, is scarcely fitted to displace long-used generic appellations in marking the familygroup.

 Sphærium occidentale, Pr., Proc. A. N. S. Phil. 1860, p. 295, = C. ovalis, Pr., Bost. Proc. 1852, p. 276 (nom. preoc.), = Sph. ovale, Stn., Add. Gen. vol. ii. p. 450. Hab. New York to Georgia; Vermont to Wisconsin; Hell-gate p. 450. *Hall* River, W. T.

21. Sphærium nobile, Gld. (Cyclas n.), Bost. Proc. 1855, p. 229 [Otia, p. 218]. San Pedro, Webb.

22. Sphærium patella, Gld. (Cyclas p.), Bost. Proc. 1850, p. 292 [Otia, p. 80; E. E. Moll. f. 527, type not returned to S. I.] Oregon.

 Sphærium Spokani, Baird [P. Z. S. 1863, p. 69, f. 12, 13: anteà, p. 605]. B. Co'.
 Sphærium tumidum, Baird [P. Z. S. 1863, p. 69, f. 11: anteà, p. 605]. B. Col.
 Sphærium meridionale, Pr., Proc. Ac. N. S. Phil. 1861, p. 414. Panama; Mus. Prime.

 Sphærium lenticula, Gld. (Lucina * l.), Bost. Proc. 1850. p. 256. California.
 Sphærium subtransversum, Pr., P. Z. S. 1800, p. 322. Mexico.
 Pisidium abditum, Hald. [?ubi] = Cyclas minor, C. B. Ad. Bost. Proc. 1841, p 48, 22. Pistaum adatum, Hald. [Pub] = Cycles muor, C. B. Ad. Bokt. Proc. 1811, p. 48,
 = P. obscurum, Pr., Bost. Proc. 1851, p. 161, +P. Kurtzii, Pr., p. 162, +P.
 zonatum, Pr., p. 162, +P. regulare; Pr., Bost. II. vi. 363, pl. 12. f. 11-13, 1852, +P. notatum, Pr., Bost. II. vi. 365, pl. 12. f. 20-22, 1852, +P. annlum +P. resartum, Ingalls, MS., +P. rubrum +P. plenum, Lewis, MS., +P. retusum, Pr., P. Z. S. 1859, p. 322.
 23. Pisidum occidentale, Newc. [Proc. Cal. Ac. Nat. Sc. 1861, p. 94]. San Francisco Parall.

cisco, Rowell.

120. Of the tertiary fossils throwing light on existing species no additional information has yet been published. We cannot but hope that the researches of Mr. Gabb, on the fossils collected by the Californian Geological Survey, will develope relations of great interest between the existing and former conditions of the continent. The Astorian fossils described by Mr. Conrad from the U. S. Exploring Expedition (vol. x., Geology, Philadelphia, 1849), and tabulated in the first Report, p. 367, belong to the Smithsonian Institution, but were not discovered there in 1860. All of them, however (including the indeterminate species), are figured in the atlas of plates. They resemble the fossils of the Pacific Railroad Expeditions in being very imperfect, for which reason the following criticisms may prove erroneous. The general aspect of the collection betokens the Miocene period.

Mya abrupta, Conr., may be the young of Glycimeris generosa, Gld. Thracia trapezoides, Conr., may be curta, Conr. Solemya ventricosa, Conr., has the aspect of a large Lazaria. Tellina arctata, Conr., closely resembles Macoma, var. expansa. Tellina emacerata, Conr., is perhaps Bodegensis, Hds. Lucina acutilineata, Conr., appears to be borealis, Linn. Cardita subtenta, Conr., = Venericardia borealis, Conr. Nucula divaricata, Conr., = Acila castrensis, Ilds. Pectuaculus patulus, Conr., may be septentrionalis, Midd. Pectuaculus nitens, Conr., resembles Psephis tantilla, Gld.

Pecten propatulus, Conr. A very fine specimen, enclosed in a large nodule from Oregon, was presented to the Brit. Mus. by Mr. C. Pace. If not identical with Amusium courinum, Gld., it is most closely allied, especially to the

Japanese form.

* Mr. Primeassigns no reason for changing Dr. Gould's Lucina into a Cyclas, nor any authority for "California." He was, perhaps, misled by the artist's engraved references to the figures 528, a, b, where he has drawn a rule, referring to the Cyclades above, instead of writing Lucina. It is assigned to "?Coast of Patagonia" in 'Otia,' p. 63, and to "?R. Janeiro" in 'E. E. Moll.,' p. 414. In each place the shell is compared to an Asiarie or Cyprina, with lateral teeth. The type was not returned to the Smithsonian Institution; but the diagnosis states that it is "chalky, thickened within the deep and jagged pallial line, sculpture faint but decussated, and margin finely crenulated,"—characters more consistent with Lucina, a. g. Myrtea, than with Cyclas. If the type caunot be recovered, perhaps the species may be dropped, as it is not the Lucina (Myrtea) lenticula, Rve.

Terebratula nitens, Conr., is very probably Waldheimia pulvinata, Gld.
Bulla petrosa, Conr., has the shape of Tornatina eximia, Bd.
Crepidula prorupta, Conr., is certainly princeps, Midd.
Turritella, sp. ind., resembles Mesalia lateola.
Polium petrosum, Conr., resembles the young of Priene nodosa, Chemn.
Fusus geniculus, Conr. A similar shell has just been taken at the Farallones by Dr. Cooper.

121. To correct the general table of "Mollusca of the West Coast of N. America" (First Report, pp. 298-345), and the deductions founded upon it (pp. 346-367), would involve the necessity of reprinting a considerable portion. The student, being now in possession of all the known sources of fresh information, can with his own pen strike out the spurious species, alter the synonyms, insert the newly discovered forms, and make the requisite corrections in the classified results.

122. With regard to the tropical fauna, the researches at Cape St. Lucas and in the interior of the Gulf of California, though leaving much to be desired, bear-out the general conclusions arrived-at in paragraphs 78-87. The evidence for the identity of specific forms on the Atlantic and Pacific sides of Central America has been greatly confirmed. Dr. Gould writes, "The doctrine of local limitations meets with so few apparent exceptions that we admit it as an axiom in zoology that species strongly resembling each other, derived from widely diverse localities, especially if a continent intervenes, and if no known or plausible means of communication can be assigned, should be assumed as different until their identity can be proved (vide E. E. Moll. Intr. p. xi). Much study of living specimens must be made before the apparent exceptions can be brought under the rule." It has, however, to be borne in mind that the researches of modern geology clearly point to considerable alterations in the existing configuration of continents, and me the consequent direction of ocean-currents, during the ascertained period of many species now living. Nor are we warranted in the belief that the existing fauna in any locality has been created at any one time, or has radiated from any single spot. To study the relations of living shells simply in connexion with the existing map of the world must lead but to partial The facts accumulating with regard to the British species, by tracing them through the northern drift (now found even on the Snowdonian range), to the oldest crag deposits when Europe was contained in far different boundaries, show how altered may have been the configuration of the new world when the oldest of its molluscs were first created. Coordinately with the glacial period, Central America may have been a group of islands; coordinately with the creation of Saxicava pholadis and Chrysodomus antiquus, the gulf-weed may have floated between the Rocky Mountains in the archipelago of West America, and Japanese molluscs may have known how to migrate to the Mediterranean shores. Dr. Gould's position may therefore be accepted in theory; yet, in practice, the "imperfection of the geological record"*, and even of our knowledge of existing species and their variations, demands that the greatest caution be exercised in building results on deductions from our ignorance. Already the fossil Mulea ringens of the Atlantic has proved a "Rosetta Stone" to interpret the Cypraea exanthema, Purpura patula, and other Caribbean shells of the Pacific; and as the geology of the West Coast advances, so may we expect to find traces of previous denizens of

^{*} No student of geographical distribution should omit to weigh carefully the chapter on this subject in Darwin's 'Origin of Species,' and the information given in Lyell's 'Antiquity of Man.'

American waters, which have bequeathed some species now flourishing, and others dying-out, to the existing seas. The present faunas of West America are perhaps the most isolated on the surface of the globe; yet, if we knew the ancestry of each specific form, we might find some first appearing with man on this planet, others first living even in historic times, others tracing their descent from remote periods, and it may be very distant localities, in the ages of the Miocene, possibly even of the Eocene oceans. These suppositions are not set forth as theories, but simply to guard against interpretations of facts based on conclusions which may be only the results of our necessarily imperfect information.

123. With regard to forms offering local peculiarities sufficient to distinguish them from correlative forms offering equal peculiarities in some other fauna, we are by no means warranted in assuming that these have sprung from different creations. If a race of men, migrating to a new continent, in a very few generations, or even in the next, develope an essentially different physique, it is fair to conclude that molluscs, borne by a change of currents to a distant region, or steadily migrating to the extreme limit of their conditions of life, will also change their appearance. If the publication of the "Darwinian Theory" has had no other effect, it has at least checked the propensity to announce "new species" for differences which may fairly be regarded as varietal. It must also be borne in mind, that if the views of Mr. Darwin be only a theory, such also is the name required for the prevalent opinion of separate creations for all diverse forms. What indeed can we possibly know of the mode of original creation of a single species? We can only prove that one or the other supposition best explains a certain class of; facts. It is not necessary for a working naturalist to commit himself to an exclusive belief in either of these theories. He may perhaps best explain some facts by the doctrine of separate creation, others by that of natural selection. In either case it is his duty to trace-out, as far as possible, the limits as well as the powers of variation in every living form, and to guard against seeing that only which accords with his prevailing belief.

124. The study of European shells, as they exist in Norway, in Britain, in the Mediterranean, at the Canaries, or as they appear at different depths and stations in our own seas, still more as they occur in the widely separated periods of the later and middle tertiary ages, is an excellent preparation for the examination of either recent or fossil faunas in districts where our knowledge is fragmentary and unconfirmed. It may be safely stated that there are, in the American waters, many tropical forms from the West Indies and the Pacific shores, some temperate forms from California and the Atlantic, and many sub-boreal species in the Vancouver district and the European seas, not differing from each other more or even so much as forms universally allowed by malacologists to have had a common origin from Britain and the

Mediterranean, from the Red and the Coralline Crag.

125. It is interesting to observe that, notwithstanding the probable connexion of the oceans through the Rocky Mountains during the Miocene age, there is extremely little similarity between the special temperate faunas of East and West America. Not a single species has yet been proved identical, and the allied forms are but few in number. They appear as follows:—

Californian species.
Clidiophora punctata.
Lyonsia Californica.
Macoma inconspicua.
Angulus modestus.
Rsēta undulata.

U. S. Atlantic species.
C. trilineata (? = nasuta).
L. (hyalina=)Floridana.
M. fusca.
A. tener.
R. canaliculata.

Culifornian species. Liocardium substriatum. Lunatia Lewisii. Nassa mendica. Amycla (species).

U. S. Atlantic species. L. Mortoni.

L. heros. N. trivittata. Amycla (species).

126. When, however, we approach the region in which boreal and subboreal forms occur, many species are found in common, and between others there is but slight difference. Yet even here there are more British than New England species in the West-coast fauna. As might be expected, the British species are for the most part those which are also found fossil, and therefore have had time to diffuse themselves widely over the hemisphere. It is, however, remarkable that many Crag species have reached Eastern Asia and West America which are not found in Grand Manan and New England. It is also extraordinary that certain special generic forms of the Crug, as Acila, Miodon, Verticordia, and Solariella, reappear in the North Pacific*. When seeking for an explanation of so remarkable a connexion between faunas widely removed in space and time, the correlative fact must be borne in mind, that the northern drift+, so widely diffused over Europe and Eastern America, has not yet been traced in the western region. The following Table exhibits, not only the identical but the similar species belonging to the northern faunas of the Atlantic and Pacific. In the Asiatio column, K denotes that the species occurs in the Kamtschatka region, J in Japan. In the second column, V signifies the Vancouver district, C the Californian, and I the Sta. Barbara group of islands. The species marked F are also fossil. In the third column, C denotes the Coralline, R the Red, and M the Mammaliferous Crag. The fourth contains the species living in the British seas; the fifth, on the American side of the Atlantic, Gr. standing for Greenland.

East Asia.	West America.	Crag.	British.	E. America.
K	V Rhynconella psittacea	(Pleistocene)	psittacea	psittacea
	V C Xylotrya pennatifera		pennatifera	r
	V Xvlotrya timbriata		fimbriata	
	V C Zirphæa crispata		crispata	crispata
K J	VC Saxicava pholadis		pholadia	pholadis
J	VC Glycimeris generosa		<b>'</b> —	· —
_	V. Sphænia ovalis	'PBinghami' 1	Binghami	_
JK	V Mya truncata			truncata
JK, lata	V Macoma inquinata	lata, R M	proxima	proxima,&c
K	V Serripes Grænlandicus	RM		Greenland.
ĸ	VI Venericardia borealis			borealis
_	V Astarte (compacta)	compressa, R M	compressa	compressa.
	V Miodon prolongatus			
	IF Lucina borealis	CRM	borealis	
	I Cryptodon flexuosus		flexuosus	l
China	I Verticordia 9-costata			l <u> </u>
	V C Kellia suborbicularis	C R	suborbicul.	<b> </b>

^{*} Whether there be any similar correspondence in the Polyzoa is not yet known, Mr. Busk not having had time to complete his examination.

[†] See, in this connexion, a very accurate Table of the species which travel round Cape Cod, with their distribution in existing seas and over different provinces of the various drift-formations in the Oid and New World, by Sanderson Smith, in Ann. Lyc. Nat. Hist. N. York, vol. vii. 1860, p. 166.

‡ From the Coralline Crag. Looks more like ovalia.

JK JK JK	V C Lasea rubra	C RM PCRM CR	rubra edulis modiolus	edulis
JK JK	VC Modiola modiolus V Modiolaria marmorata	PC R M		edulia
JK	V Modiolaria marmorata		modialna	
JK JK		( P	modicius	modiolus
JK I	V – Modiolaria lævigata l	O IL	marmorata	marmorata
JK 3		_	nigra	læv.gata
	I Crenella decussata	_	decussata	glanduia
ingignis,&c.	V Nucula tenuis	CRM	tenuis	tenuis
	VCIF Acila castrensis	Cobboldiæ,RM	-	_
	V Yoldia lanceolata	R M	-	lanceolata
1 1	V Leda minuta	R M	caudata	minuta
	I Limæa subauriculata	C	subauricul.	
· -   1	V C Hinnites giganteus	Cortesyi, C		_
(Asia)	V Limnæa palustris	M	palustris	palustris
1 '-'	V C Cylichna attonsa	cylindraces,CR	attonsa	· -
! -	V Haminea hydatis	M '	hydatis	
i - 1	VC Dentalium Indianorum	entale, M	entale	striolatum
JK, cæca.	V Lepeta cæcoides		(cæca, Nor.)	cæca, Gr.
-	V Margarita helicina	_	helicina	helicina
-	V Margarita ?Vahlii			Vahlii, Gr.
	V Mesalia lacteola	_	-	lactea, Gr.
	V Lacuna vincta	M	vincta	vincta
K(turricula)	V Bela fidicula	turricula, R	turricula	turricula
-	V Bela excurvata	Trevelliana, R	Trevelliana	_
[ - ]	V C Scalaria Indianorum		communis	
1 K I	V Velutina lævigata	M	lævigata	lævigata
K	V Natica clausa	R	(Norway)	clausa
_	V C I Eulima micans	polita, CR	micans	_
! - 1	V Cerithiopsis tubercularis		tubercularis	_
	VI Triforis adversus	č	adversus	
-   0	CI Erato columbella	Maugerise, C R	_	(W. I.)
	V C Purpura saxicola		lapillus	lapillus
i - i	V Chrysodomus liratus			10-costatus
-	V Trophon multicostatus	_	(Norway)	Gunneri

127. The following species (besides others dredged by Mr. A. Adams, but not yet determined) have been found on both the Asiatic and American shores of the N. Pacific, in addition to those recorded by Middendorff, v. Brit. Assoc. Report, p. 223.

_'.	
Terebratella Coreanica.	Cardium modestum.
Waldheimia Californica.	Amusium caurinum.
Waldheimia pulvinata.	Placunanomia macroschisma.
Waldheimia Gravi.	Crepidula grandis.
Glycimeris generoa.	Drillia inermis.
Schizothærus Nuttallii.	Lunatia pallida.
Solen sicarius.	Priene Oregonensis.
Sanguinolaria Nuttallii.	Cerostoma foliatum.
Tellina Bodegensis.	Siphonalia Kellettii.

128. The Vancouver and Californian districts have so many characteristic species in common (111 out of 492), that they must be regarded as constituting one fauna, differing as do the British and Mediterranean regions. Full particulars as to the range of the different species may be expected in Dr. Cooper's Report to the Californian Geological Survey. One fact must, however, be here specially noted, viz. the great peculiarity of the island-fauna. Although the Sta. Barbara group are so near the mainland, the dredge has not only produced many species not known on the continent, but also many

before considered as essentially tropical. Along with these are not only some species of types hitherto regarded as almost exclusively Asiatic, as Verticordia, Solariella, and Fulvia modesta, but also some which belong to the sub-boreal district, as Lucina borealis, Venericardia borealis, and Crenella decussata. The latter belongs to the British, and not to the N. England form.

129. Of the blending of the temperate and tropical faunas on the peninsula of L. California we are still in ignorance. All we know is, that at Margarita Bay the shells are still tropical, and that at Cerros Island they are strangely intermixed. There is peculiar evidence of connexion between the faunas of the peninsula and of S. America, not only in the land-shells (v. anteà, p. 630), but in some of the marine forms. Beside identical species with wide range, as many Calyptræids, the following are coordinate between the North and South Pacific:-

Upper and Lower California. etastoma Darwinii. Solecurtus Californianus Semele rupium. Callista var. puella. Chama pellucida. Liocardium substriatum. Axinæa (Barbarensis.) Verticordia novemcostata. Pecten æquisulcatus. Siphonaria thersites. Tonicia lineata. Acmæa patina. Acmæa persona. Scurria mitra. Chlorostoma funebrale. Mitra maura Ranella Californica. Priene Oregonensis. Trophon multicostatus.

N. Darwinii. S. Dombevi. (Ditto, Galapagos.) C. pannosa. C. pellucida. L. Elenense. A. intermedia. V. ornata. P. ventricosus. S. lateralis, &c. T. lineolata.

A. scutum, D'Orb. A. "Oregona," H. C. S. scurra.

C. mœstum. M. maura. R. ventricosa. P. cancellata. T. Magellanicus.

Time and space do not avail for pointing out further relations with exotic faunas; which indeed will be performed with greater correctness after Dr. Cooper shall have published his complete lists.

130. For the sake of avoiding the inconvenience of trinomial nomenclature, the subgeneric and varietal names have often been cited in this Report instead of the generic and specific, in order that the exact form of the shell quoted might be more quickly determined. The diagnoses of all the new species here tabulated are written for the press, and will shortly appear in the different scientific journals. Additional specimens will probably prove several forms to be conspecific which are here treated as distinct. In the present state of the science, absolute certainty is not to be attained. The object of the writer has been principally to bring together the works of his predecessors, and so to arrange and describe the new materials that those who continue his labours may be able to draw their own conclusions from existing data. In order to facilitate reference, a brief index is here given of the subject-matter of the former and of the present Reports.

* The best thanks of the writer are due to Hugh Cuming, Esq., for the free use of his collection; to Messrs. H. & A. Adams, Hanley, Reeve, and Sowerby, for aid in identifying specimens; to the officers and naturalists connected with the Smithsonian Institution; to Dr. A. A. Gould, for very valuable corrections; and generally to authors and friends, who have kindly rendered him all the assistance in their power. He earnestly invites criticisms on the subject-matter of the two Reports; in order that they may be embodied, and errors corrected, in the Manuals of the West-Coast Mollusca which he has undertaken to prepare for the Smithsonian Institution.

Warrington, Aug. 22nd, 1864.

Paragrap	TABLE OF CONTENTS.				Page in eport IL		
	Physical Condition of West America	•••	•••	159		P	
	Errors respecting Habitat	•••	•••	162	•••		
	Errors of Nomenclature	•••	•••	164	•••		
22.	Table of Localities	•••	•••	167	•••	517	
23.	Table of collectors. Early Writers. Linnæus,	Soland	ler,				
	Martyn, Chemnitz, Dixon, Dombey, Perr						
	Dillwyn, Lamarck, Swainson	•••	•••	168	•••	517	
<b>24</b> .	Humboldt and Bonpland (Valenciennes)	•••	•••	169	•••	521	
<b>2</b> 5.	Voyage of 'Coquille: Lesson	•••	•••	172	•••	521	
<b>2</b> 6.	Kachacholtz	• **	•••	172	•••	521	
	Tankerville Catalogue: Zoological Journal	•••	•••	174	•••	522	
	Voyage of 'Blossom': Beechey, Belcher	•••	•••	175	•••	522	
29.	Wood's 'Index Testaceologicus' and Supp'em	ent	•••	178	•••	523	
30.	Voyage of 'Astrolabe': Quoy and Gaimard	•••	•••	179	•••		
	Voyage of 'Adventure' and 'Beagle': King	•••	•••	179	•••	52 <b>4</b>	
	Hugh Cuming's Researches	•••	•••	179	•••		
	D'Orbigny's S. America	•••	•••	189	•••		
	Botta	•••	•••	191	•••		
	Blainville's Purpure	•••	•••	191	•••	KO4	
30. 97	Guérin's Magasin: Duclos	•••	•••	191	•••	52 <del>4</del>	
	Voyage of 'Beagle': Darwin (see also p. 359)		•••	192	•••	525	
	Lady Katherine Douglas (afterwards Wigram)		•••	192 192	•••	525	
40.	Nuttall; Conrad	•••	•••	201	•••	020	
41	Voyage of 'Bonite': Eydoux and Souleyet 'Venus': Deshayes, Valenciennes	•••	•••	202	•••	528	
<b>42</b> .	(Rulphow) · Hinda	•••	•••	204	•••	529	
• -= -	U. S. Exploring Expedition; Gould			208	•••	529	
	Middendorff	•••	•••	214	•••	532	
45.	Voyage of 'Samarang': Adams and Reeve		•••	224		534	
	E. B. Philippi	•••	•••	224	•••	534	
	Mexican-War Naturalists, Rich and Green; a			225	•••	534	
	Melchers; Menke	•••	•••	235	•••		
	Kellett and Wood; Forbes	•••	•••	239	•••	542	
	Reigen; Br. Mus. Mazatlan Catalogue	•••	•••	241	•••	542	
	Conrad on Wilson's shells	•••	•••	264	•••	634	
	Jay's Catalogue	•••	•••	265	•••	548	
	C. B. Adams; Panama Catalogue	•••	•••	265	•••	549	
	Br. Mus. Catalogues; Venerides	•••	•••	281	•••	553	
	Sailor's Collection	•••	•••	281	•••	554	
	Gould's Collection	•••	•••-		•••	554	
58.	Bridges	•••	•••	284	•••	554	
<i>ეგ.</i>	Proceedings of the Zoological Society	•••	•••	285	•••	554 550	
00. 61	Sowerby; 'Conchological Illustrations' 'Thesaurus Conchyliorum' and 'Ma	 Isanlari	 	288	•••	559	
61.	Magazine'		· ONI	288		561	
	Sowerby's 'Genera'; Reeve's 'Conchologia Sy	etemati	,		•••	561	
62	Reeve's 'Conchologia Iconica'			289	•••	562	
	Kiener, 'Coquilles Vivantes'	•••		293	•••	563	
64. 65.	German authors; Pfeiffer, Menke, Philipp	i, Küst					
¥-, 50.	Dunker	•••	•••	294	•••	573	
66.	British Museum Collection	•••	•••	296	•••	574	
67.	Cumingian Collection	•••	•••	297	•••		
68.	Various European sources: Bosc, Lesson, Gra	y, Woo	od-				
	ward, Hanley, Journ. de Conch., Chenu	, Ducl	08,	~~=			
	Deshayes	•••	•••	297	•••	575	
<b>69</b> , 121.	General Table of the Western Faunas	•••	•••	297	•••		
<b>70</b> , <b>71</b> .	Isolation from other Provinces	•••	•••	346	•••		
72, 73.	Boreal and Sitcha District	•••	•••	347	•••	Q9K	
	Fauna of Oregon and Upper California		•••	348	•••	635	
77, 78.	Lower California; S. Diego, S. Pedro			gga			
<b>MO.</b> 00	La Paz, Guaymas	•••	•••	350 353	•••		
79-83. 01 07 100	Tropical Fauna; Galapagos	•••	•••	362	•••	680	
01-01, 122	Comparison with other Faunas	•••	•••	<del></del>	•••		
	171						

			Pege	in
Paragraph.		Report	I.	Report IL.
88. Land and Freshwater Shells	•••	366		
	•••	367	•••	
A1 100 B 100 C FF OF B 1 B	•• •••	367	•••	679
	••	367	•••	
93. Smithsonian Institution; Collections and			•••	577
94. N. Pacific Exploring Expedition; Stimp	on Gould		•••	582
OF TT O T . T		•••		587
00 A A 3 T		•••	•••	588
90. A. Adams; Japan	•• •••	•••	•••	
97. Pacific Railroad Reports; Blake's Fossil	• ···	283	•••	588
98. " Gould's Shells			• • • •	592
99. " Newberry's Fo	**	•••	•••	593
100. " " Antisell's Foes		•••	•••	594
101. W. Cooper's S	hells (Coop.)	•••	•••	596
102. U. S. N. Pacific Boundary Survey; Ken	nerley	•••	•••	601
103. Brit. , , , ; Lord	i, Lyall, Fort	bes	•••	603
104. Californian State Geological Survey; J.	G. Cooper (C	p.)	•••	607
105. Cape St. Lucas Shells; Xantus		•••	•••	616
100 17 1 10 17 17 1 10 10 10 10 10 10 10 10 10 10 10 10 1		•••		<b>626</b>
		•••	•••	628
107. Farallone Islands				629
		•••	•••	630
110. Californian Naturalists: Trask, Newcomb				
ה ס	•• •••			631
111. Various American publications				633
112. General Table of the Vancouver and Cal			•••	635
113. Additional Shells from Lower California			•••	· ·
				664
Cerros Island, Margarita Bay, Le Paz,	Accounted D	1	•••	<del>001</del>
114. Additional Shells of Tropical Fauna;				660
Llejos, Panama		•••	•••	668
115. General List of Land, Freshwater, and	marine Puin	10-		
	•• •••	•••	•••	669
	••	•••	•••	676
	•• •••	•••	•••	677
118. Unionidæ; Les	•• •••	•••	•••	677
119. Cyrenidæ; Prime		•••	•••	678
91, 120. Tertiary Fossils		367	•••	679
00 101 O	'	297	•••	680
04 100 61 1 11 11 11		362	•••	680
100 T - 1	••	•••	•••	681
124. Comparative study of European Fauna .		••• • •••	•••	681
125. Comparison with Eastern American Fau		•••	•••	681
100 0 - 101 11 0 11 11		••• •••	•••	652
		••• •••	•••	683
			•••	684
120. Comparison of the West Coast of N. and		•••		684
100 17		•••	•••	684
AARA BELUIZUBUUU OI NUUUUUUBUUT				WITE

# REVIEW

OF

# PROF. C. B. ADAMS'S CATALOGUE

OF THE

# SHELLS OF PANAMA, FROM THE TYPE SPECIMENS.

BY

PHILIP P. CARPENTER, B. A., PH. D.

From the Proceedings of the Zoōlogical Society of London, pp. 339-369, June 23, 1863.

(173)



Review of Prof. C. B. Adams's 'Catalogue of the Shells of Panama'*, from the Type Specimens. By Philip P. Carpenter, B.A., Ph.D.

A résumé of this important contribution to our knowledge of local faunas, and a comparison with the British Museum 'Descriptive Catalogue of the Reigen Collection of Mazatlan Mollusca,' is given in the 'Report of the British Association' for 1856, pp. 265-281. Full series of the old species, and the first specimens of the new, were deposited by Prof. Adams in the Museum of Amherst College, which also contains similar series of the Professor's Caribbean collections. The second specimens of new species were sent to Mr. Cuming, and through his kindness were freely used in preparing the Mazatlan Catalogue, thus avoiding the necessity of many synonyms. An instructive lesson in candour and forbearance may be learnt by comparing together the works of any two naturalists of equal celebrity, or by comparing either of them with the types. With the best desires for accuracy, and the greatest carefit is hardly possible for an author to describe so that his readers shall see shells as he sees them. If this be true of such full and precise diagnoses as those of Adams and Gould, how much greater must be the difficulty to foreigners of recognizing shells from the brief descriptions of Broderip, Lamarck, and the older writers generally. The careful

^{*} Catalogue of Shells collected at Panama; with Notes on their Synonymy, Station, and Geographical Distribution by C. B. Adams, Professor of Zoolocy, &c., in Amherst College, Mass. Reprinted from the 'Annals of Lyceum of Nat. Hist. N. Y.,' vol. v. New York, 1852.

preservation of types therefore, and the interchange of specimens named from types, is of the first importance to save the time and ensure the accuracy of succeeding writers. The Smithsonian Institution has fully recognized this principle by directing that the first available duplicate of all type species described from its collections shall be deposited in some museum open to students on the other side of the Atlantic.

As the authorities of Amherst College had not taken any steps to figure their unique specimens, and as Prof. Adams's determinations of old species had not been verified, I made it my business (when visiting America to deposit the first duplicate series of the Mazatlan Shells in the New York State Museum at Albany) to compare Prof. Adams's collection, on the spot, with his published book, in my copy of which I made my notes and sketches at the time. Every facility was afforded me by the Curator. I was allowed freely to handle the specimens in the presence of his assistant, and to draw the minute species under my microscope. I took with me for comparison the drawings of the minute Mazatlan shells in the British Museum. The species being numbered in both the Panama and the Mazatlan lists, it is easy now to institute a comparison between them. They are here distinguished by the initials P. and M.

- P. 1. Ovula avena. May be distinct from Radius variabilis, M. 435, being much more stumpy, with a thicker lip; but the few specimens are in poor condition, and the differences may be accidents of station.
- 2. Ovula emarginata = Carinea e. Quite distinct from its Caribbean analogue C. gibbosa.
- 3. Ovula neglecta, C. B. Ad., is probably a small variety of Radius variabilis.
  - 4. Ovula variabilis, C. B. Ad. = Radius v., M. 435.
  - 5. Ovula, sp. ind., probably = variabilis, jun.
  - 6. Cypræa arabicula=Aricia a., M. 438.
- 7. Cypræa cervinetta=C. exanthema, M. 436. Having now examined a multitude of specimens from different stations on the west coast, which differ from each other quite as much as they do from the typical Caribbean forms, I am confirmed in the belief of their identity.
- 8. Cypræa punctulata = Aricia p. Erroneously given, in M. p. 374, as a probable synonym of A. arabicula. It is less thickened at the sides, with smaller spots. Although specimens of arabicula graduate into it at the back, it may always be known by the mouth, which has its teeth much further apart.
  - 9. Cypræa pustulata = Trivia p., M. 439.

- 10. Cypræa radians=Trivia r., M. 440.
- 11. Cypræa rubescens=dead sp. of Trivia sanguinea, M. 442.
- 12. Cypræa sanguinea=Trivia s., M. 442.
- 13. Erato scabriuscula. Stet.
- 14. Marginella minor. Stet, M. 587.
- 15. Marginella sapotilla. The Panama specimens collected by Prof. Adams, and abundantly by others, more closely resemble M. prunum than the type M. sapotilla of Hinds, which is a much smaller shell. The Caribbean shells (which are found across the Isthmus at Aspinwall) differ only in having a sharper angle in the labrum at the posterior notch. Adamson's habitat, doubted by Prof. Adams (note, p. 41), is confirmed by specimens in the Bristol Institution brought from Sierra Leone by Chief Justice Rankine. The Pacific shells are probably conspecific, sufficient evidence being now in our possession that the two oceans were united at least as late as the Miocene epoch*.
  - 16. Mitra funiculata. Stet.
  - 17. Mitra lens, M. 585.
- 18. Mitra nucleola. Closely resembling young specimens of the Caribbean M. granulosa.
- 19. Mitra solitaria, C. B. Ad. = Zierliana s. Other specimens have since been found of this characteristic species. The "transverse ribs" can scarcely be said to be "obsolete anteriorly."
  - 20. Mitra tristis = Strigatella t., M. 586.
  - 21. Terebra elata = Myurella e.
  - 22. Terebra larvæformis = Myurella l.
  - 23, 24. Stent.
  - 25. Terebra tuberculosa = Myurella t.
- 26. Terebra varicosa. This may possibly be a very young specimen of Subula v.; but I think it distinct.
- 27-31. Sp. ind. A specimen of Euryta fulgurata, M. 455, is in the museum, as from Panama, but not of Prof. Adams's collecting.
  - 32. Oliva angulata, M. 590.
- * The specimens in the Cumingian Museum, named M. cærulescens at the time of the British Association Report, are now labelled "sapotilla, Hds., 5-13 fathoms andy mud, Panama, H. C." Another set of Pacific shells (notch-angle rounded) are given as "Marginella n. s., Panama," "San Domingo" having been erased. The large West Indian form (notch-angle sharp) is given as "cærulescens, var., Lam., 10 fathoms sandy mud, Panama." Another set of large shells, with sharp angle, and labrum tinted behind, is given as "cærulescens, Lam., Panama," but without authority. The small West-Indian form (like the typical sapotilla) is given as "glans, Mke." Either in this, as in other instances, error has crept into the locality-marks, or else even the distinction pointed out by Mr. Redfield (who has given peculiar study to this genus) cannot be relied on for separating the spectra gaugraphically.

- 33. Oliva araneosa = O. meichersi, M. 591. Prof. Adams's shanty specimen can scarcely be distinguished from that which he marked "O. literata, Alabama." But the ordinary aspect of the shells O. reticularis from the Caribbean Islands, O. literata from the coast of the Southern States, and O. melchersi from the Pacific, is sufficiently distinct (for the genus).
- 34. Oliva inconspicua, C. B. Ad. = Olivella i., M. 599. Some of the shells referred to this species from Panama, Mazatlan, and Cape St. Lucas graduate into the Caribbean O. oryza; others into dwarf forms of O. gracilis. The species either needs revision from fresh specimens, or should be merged into O. gracilis.
- 35. Oliva pellucida, C. B. Ad. Dead specimen; differs from Olivella p., Rve.
  - 36. Oliva porphyria. Stet.
- 37. Oliva semistriata = Olivella s. Closely resembles O. columellaris.
  - 38. Oliva testacea = Agaronia t., M. 602.
  - 39. Oliva undatella = Olivella u., M. 595.
- 40. Oliva renulata. This shanty specimen is O. angulata, jun. The O. venulata, M. 593, is named by Prof. Adams O julietta, as also by Mke. (non Ducl.). The true O. julietta (Guacomayo, Mus. Smiths.) is the Pacific "analogue" of O. fusiformis.
- 41. Oliva volutella = Olivella v. It is surprising that this species, so immensely common at Panama and up the coast, should not reach the Gulf, and that the equally common O. tergina of Mazatlan and O. gracilis of Cape St. Lucas and Acapulco should be rare elsewhere, while the larger Olives are found from Guaymas to the equator. O. dama (=lineolata, Gray, C. B. Ad.), abundant at Mazatlan, was bought, not collected, by the Professor at Panama.
- 42 Planaxis planicostata. Stet. Also immensely common at Panama, though absent from Mazatlan.
- 43. Nassa canescens, C. B. Ad. Having compared this unique specimen with P. 50, q. v., I can speak to their complete identity. The "pale grey" of the "interspaces" is due to the shell being dead.
  - 44, 45. Stent.
  - 46. Nassa gemmulosa = M. 631, exactly.
  - 47. Stet.
  - 48. Nassa luteostoma=M, 623.
  - 49. Nassa nodifera. Also found at Guaymas.
- 50. Nassa pagodus, C. B. Ad. (+N. canescens, P. 43) = N. (? pagodus, var.) acuta, M. 625. It is certainly the N. decussata of Kien., but probably not of Lam. Whether it is the Triton pagodus of Rve. I am still unable to say, the type being apparently lost. We are bound to suppose that Mr. Reeve could not mistake so de-

cided a Nassa for a Triton; so that if Lamarck's is a similar Easte 11 species, the West American may stand as N. acuta.

- 51. Nassa panamensis, C. B. Ad. The Professor rightly marked his duplicates "exilis, Pws." This abundant shell, having a Pisanoid, not a Nassoid operculum, probably belongs to Phos, Northia, or some genus not yet eliminated. N. obsoleta, Say, has a similar operculum, and appears nearly related.
- 52. Nassa proxima. The unique specimen appears to be an extreme form of N. versicolor, P. 55.
- 53. Nassa? scabriuscula, C. B. Ad. (non Pws.)=N. complanata, Pws.: v. P. 56.
- 54. Nassa striata, C. B. Ad. The two type specimens, one young, the other adult, both belong to a variety of versicolor. The phrase, "last whorl spirally canaliculate on the left side," simply expresses the ordinary character of Nassa. The specimens in Mus. Cuming., however, from another source, differ somewhat in the nucleus from the small form of N. versicolor. These = N. paupera, Gld., teste Cuming, and should take that name.
- 55. Nassa versicolor, C. B. Ad., M. 632. The revolving strize vary so greatly in this species, as well as the size, obesity, and colour, that it is hard to assign its limits. The specimens marked versicolor by the Professor vary much more among themselves than the extreme ones do from his proxima and striata. The apex and early whorls of each are exactly the same under the microscope. It is possible that the unique crebristriata, M. 633, is also an extreme variety.
- 56. Nassa wilsoni appears to be only a dwarf form of P. 53, N. complanata.
  - 57. Buccinum crassum=Phos c.
  - 58. Buccinum distortum = Clavella d.
  - 59. Buccinum insigne = Pisania i., M. 659.
- 60. Buccinum lugubre, C. B. Ad. The Professor marked this shell on his card "Murex??"; then "Fusus?"; then "Fusus nodulosus, Ad., n. s."; then "Buccinum (?) lugubre, Ad., n. s."; so that the old genera were sometimes as badly defined as the new ones. It may rank with Pisania.
  - 61. Buccinum pagodus = Pisania p.
  - 62. Buccinum pristis=Northia serrata.
  - 63. Buccinum ringens = Pisania r., M. 663.
  - 64. Buccinum sanguinolentum = Pisania s., M. 662.
  - 65. Buccinum stimpsonianum=Nassa st.
  - 66. Dolium ringens=Malea r.
- 67. Monoceros brevidentatum. This species, very common at Panama, has been transported over (not through) the Pacific, to San Francisco and Monterey v. P page 75.

- 68. Monoceros cingulatum = Leucozonia c., M. 583.
- 69. Purpura carolensis = P. triangularis, M. 608.
- 70. Purpura foveolata = Cuma costata, M. 610, probably; but the markings have been too much obliterated to decide with confidence.
- 71. Purpura kiosquiformis=Cuma k., M. 609. There are in the collection three shells, labelled by the Professor "P. purpuroides (Fusus), Orb., Panama" = Pisania d'orbignyi, Rve. No authority is given, and they probably came from Peru.
- 72. Purpura, sp. ind. This shell is not to be found. It has probably been put with the last, of which it is no doubt a variety: v. M. p. 482.
  - 73. Purpura melo. Stet.
- 74. Purpura osculans appears to be the young of Rhizocheilus nux, M. 611; of which R. distans, Cpr., and probably R. californicus, A. Ad., are only varieties.
  - 75. Purpura tecta = Cuma t.
  - 76. Purpura undata=P. biserialis, M. 606.
  - 77. Columbella atramentaria = Anachis a.
  - 78. Columbella bicanalifera = Strombina b.
- 79. Columbella boivinii. This species must rank with (Anachis or) Engina*, the operculum being Pisanoid.
  - 80. Columbella conspicua = Anachis c.
- 81. Columbella costellata, C. B. Ad. = Anachis scalarina, Sby., M. 645; not A. costellata, Sby., M. 646.
  - 82. Columbella diminuta = Anachis d.
  - 83. Columbella dorsata=Strombina d.
  - 84. Columbella fluctuata = Anachis fl.
  - 85. Columbella fulva = Anachis f., M. 648.
- 86. Columbella fuscata, M. 617. The small var. is C. festiva, Kien.
  - 87. Columbella gibberula=Strombina g.
  - 88. Columbella gracilis = Anachis g.
  - 89. Columbella guttata=Nitidella cribraria, M. 613.
  - 90, 91, 92. Stent.
  - 93. Columbella lyrata=Anachis l
  - 94. Columbella major, M. 615.
- 95. Columbella modesta = Truncaria m. It might be convenient to leave this genus as arranged by Messrs. H. and A. Ad. Mr. Henry Adams desires to restrict it to the type species, in which
- * Of the shells called by French authors Semi-Ricinula, these with a Purpuroid operculum may be retained as Sistrum, while those with Pisanoid operculum should be removed as Engina, with Anachis, to the Muricidæ.

case this and similar species must be moved to Nitidella, if the operculum be (as is presumed) Purpuroid; or to Amyela, if Nassoid.

- 96. Columbella mæsta = Anachis m.
- 97 Columbella nigricans = Anachis n.
- 98. Columbella parva. This appears to be only a dead specimen of C. pygmæa, P. 100.
  - 99. Columbella pulchrior is probably a Nitidella.
  - 100. Columbella pygmæa = Anachis p., M. 651.
- commonest and most variable species of the genus. The typical specimens are somewhat stumpy, with stout knobs. Then the knobs pass into long, compressed ridges, and finally change into narrow bars. These are wide apart, or close, or nearly evanescent ou the back. The shape passes from the stumpy to an acuminate form like costellata. Some adults are more than twice the size of others; but the same variations are found in both extremes. The colours are generally laid on in patches on the knobby specimens; in fine flames, on the smoother ones. In all varieties, it is known from fuctuata by the spiral strize over the whole surface; and from varia by the shoulder, more or less developed into a keel, on the whorls of the spire.
  - 102. Columbella strombiformis, M. 616.
- 103. Columbella tessellata, C. B. Ad. (non Gask.) = Anachis guatemalensis, Rve.
  - 104. Columbella turrita=Strombina t.
  - 105. Columbella varia = Anachis v.
- 106. Columbella sp. ind. is the young of a species in Mus. Cuming., resembling harpæformis.
  - 107 Ricinula carbonaria = Engina c.
- 108. Ricinula jugosa may be an Engina, but has more the aspect of the Pacific group Peristernia.
  - 109. Ricinula reeviana = Engina pulchra, Rve.
- 110. Cassis abbreviata = Bezoardica a. On comparing a large series of specimens from Cape St. Lucas with a similar series of C. inflata from Texas, I was unable to discover any specific differences. It varies greatly, from each ocean, in painting, sculpture, height of spire, &c.
  - 111. Cassis coarctata=Levenia c.
- 112, 113, 114(=M. 480), 115, 116(=M. 481), 117, 118*(=M. 476), 119*(=M. 477), 120(=M. 475), 121, 122(=M. 381, galeatus), 123(=M. 449), 124(=M. 448), 125. Stent.
- * Having now examined a large number of specimens of these two forms, I have no hesitation whatever in regarding Comus regalitatis as simply a variety of C. purpurascens. Similar differences may be observed in comparing large series of almost all Cones.

- 126. Triton chemnitzii = Argobuccinum nodosum, M. 580. These shells are small and turreted. Those Prof. Adams marked in T. cingulatum, Lam., E. Indies, are much more like the Mazatlan shells.
- 127. Triton constrictus = Distortio c. The specimens of this group from the Pacific Coast, from the Gulf of Mexico, and from the China Seas are very difficult to discriminate.
- 128. Triton fusoides. This unique and very elegant shell can scarcely be called a Triton, even of the Epidromus type. It may perhaps rank with Euthria, but is peculiar in possessing a distinct anterior sinus, near the canal, like Rostellaria.
  - 129, 130, 131, 132*, 133, 134*, 135. Stent.
  - 136. Murex dubius=Muricidea dubia, M. 673.
  - 137. Murex erosus = Muricidea e.
- 138. Murex radix=Phyllonotus r. The Professor's specimens of this species are remarkably fine, more nearly resembling the Gulf nigritus than the heavy stumpy shells usually seen. His young specimens are heavier, but more turreted, than the young nigritus. The opercula appear to have fewer frills; but such differences may be due only to station. The specimens he marked ambiguus (without locality) belong to the typical nigritus. Phyllonotus radix and nigritus graduate into each other almost as freely as the latter does into ambiguus: v. M. 666.
- 135. Murex rectirostris. This and kindred species run into each other too closely, when adult, to speak with any confidence on so young a specimen in bad condition.
- 140. Murex recurvirostris. This specimen is also far too imperfect to affiliate: v. M. 665.
  - 141. Murex regius=Phyllonotus r., M. 670.
- 142. Murex salebrosus = Vitularia s., M. 612. The curious group of Muricoid Purpurids culminates on the West American shores. It is represented in the north temperate regions by Cerastoma, on the warmer shores by Chorus, and in the tropical regions by Vitularia. The Lower Californian Murex belcheri, Hds., belongs to the group. Dr. Alcock (who has succeeded the late Capt. Brown as Curator of the Manchester Natural History Museum) has pointed out very well-marked physiological distinctions between the two families, which are coordinate with the differences in the opercula.
- * Dr. Gray (Guide to Mollusca, pp. 39, 42) leaves the round-variced Ranellids, as Apollon, in the Tritonida, "operc. annular, nucleus subapical, within the apex;" but removes the sharp-variced species, as Ranella, to the Cassidida, and figures the operculum like Bezoardica, "half-ovate, nucleus central, lateral, internal." The operculum of R. cælata, No. 132, is almost identical with Murex, and the shell accords with Apollon; but R. nitida, No. 134, which has very sharp varices, has its operculum widely removed from Bezoardica. It is closely related to that of Cerastoma, Rhizocheilus, and some of the Ocinebræ; nucleus near the anterior end of the labrum; labral portions of the annular layers croded; scar as in Purpurids, with about three roughly angular ridges of growth.

- 143. Murex vibex. This Peruvian species also probably belongs to the Purpurid group.
  - 144. Murex vittatus=Muricidea v.
  - 145. (=M. 638), 146 (=M. 579). Stent.
- 147. Fusus bellus, C. B. Ad. This is a pretty little shell, resembling a young Metula, and is probably one of the species assigned with doubt to that genus, M. 619-622, or to Fusus, M. 642. I should erase the words, "some of which are varicoid" (referring to the radiating ribs), as my glass did not enable me to detect a single one.
- 148. Fasciolaria granosa. A minute specimen is of the size and general appearance of the fry of Chrysodomus antiquus, with one and a half irregular nuclear whorls. An adult has its operculum broken and mended from a subcentral nucleus—a mode of proceeding which I have now observed in such a multitude of species belonging to different families of Proboscidifers and Toxifers that I venture to assign it as the original type of their opercula, from which the special family forms are modifications of high development. Of the spiral Rostrifers there is not yet sufficient evidence to speak.
  - 149. Turbinella cæstus, M. 581.
  - 150. Turbinella castanea = Latirus c.
  - 151. Turbinella cerata=Latirus c., M. 582.
  - 152. Turbinella rudis=Latirus r.
  - 153. Turbinella spadicea = Latirus s.
- 154. Cancellaria affinis. Very closely allied to C. urceolata, M. 445.
  - 155, 156, 157 (=M. 446), 158, 159. Stent.
- 160. Cancellaria pygmæa is simply a young specimen of C. gc-niostoma, no. 157.
  - 161, 162. Stent.
  - 163. Pleurotoma aterrima=Drillia a.
- 164. Pleurotoma atrior. This is a fine specimen, not quite mature in the lip, of Drillia aterrima, var. melchersi, M. 461.
  - 165. Pleurotoma bicanalifera = Clathurella b.
  - 166. Pleurotoma collaris = Drillia c.
  - 167. Pleurotoma concinna = Cithara c.
  - 168. Pleurotoma corrugata = Drillia c.
- 169. Pleurotoma discors = Drillia d. Probably a finely developed variety of aterrima.
- * When at Charleston, S. C., I had an opportunity of examining many very fine specimens of the giant Fasciolaria, so seldom seen in this country, of which a broken specimen in my collection measures 20 in. In sculpture, colour, and general appearance some were so very like F. princeps, M. 584, that I was tempted to consider the latter a degraded local vancy, this I bound the operculum, which is destitute of the singular grooving of the Gulf species.

- 170. Pleurotoma duplicata=Drillia d.
- 171. Pleurotoma excentricu = Drillia e. I cannot endorse this and some other determinations of critical species of Pleurotomids, not being able to remove the specimens for comparison with types. Even the types in Mus. Cuming. do not always present satisfactory diagnostic characters.
- 172. Pleurotoma exigua=Mangelia e. I could not discover "the rest in pairs."
  - 173. Pleurotomu gemmulosa=Mangelia g.
  - 174. Pleurotoma grandimaculata = Drillia g.
- 175. Pleurotoma incrassata = Drillia i., M. 459. The collection contains D. luctuosa, M. 467, as from Panama, but not of the Professor's collecting.
  - 176. Pleurotoma nigerrima = Drillia n.
  - 177. Pleurotoma obeliscus = Drillia o. Very worn and doubtful.
- 178. Pleurotoma olivacea. Closely resembles P. funiculata, M. 457.
  - 179. Pleurotoma pallida = Drillia p.
  - 180. Pleurotoma rigida = Clathurella r.
- 181. Pleurotoma rudis. It is probable that this is not the true Drillia rudis, being distinguished by white spots on the knobs: v. M. 460:
- 182. Pleurotoma rustica = Drillia aterrima, var. melchersi, M. 461. These specimens being very worn, their specific identity with P. 164 was not recognized by the Professor. One shell, marked "rustica, var.," may be the true rustica—a species by no means satisfactorily distinguished.
  - 183. Pleurotoma striosa = Drillia s.
  - 184. Pleurotoma zonulata = Drillia z., M. 463.
- 185. Pleurotoma, sp. a. A small, dark, purple-brown Mangelia, of the leufroyi type.
- 186. Pleurotoma, sp. b. A slender, pure-white, ribbed shell; probably a Cithara.
  - 187. Mangelia, sp. c. A young Daphnella.
- 188. Mangelia, sp. d. A very worn, black shell; with white, knobby ribs.
- 189. Mangelia, sp. e. A very small, white shell; resembling a young Bela turricula.
- 190. Mangelia, sp. f. A very small, white Drillia, with distinct posterior notch; spirally striated, with rather sharp ribs.
- 191. Mangelia neglecta. Of the "elevated spiral line on the middle of the whorls" I could discover no trace, except of colour. It is therefore probable that it=M. acuticostata, M. 473.

- 192. Mangelia sulcosa is the true Columbella s of Sby.
- 193. Cerithium adustum=C. maculosum, M. 381.
- 194. Cerithium assimilatum = Cerithiopsis a., M. 563.
- 195. Cerithium bimarginatum = Cerithiopsis b. A good species; but I could not detect the "intermediate raised line." The apical whorls are almost smooth. The "prominent spiral fold" on the columella is simply that which bounds the recurved caual.
- 196. Cerithium famelicum. Confusion has arisen from the Professor having sent to Mr. Cuming as his type a shell which does not answer to the diagnosis, and which is described as (? var.) mediolæve, M. 382. Ten specimens are retained in the Amherst Museum, of which eight are of the uncinatum type, = M. 383, and two of the Cumingian. C. uncinatum, being an old species, is probably from the Atlantic or E. Indies: if this should prove identical, the name fumelicum must be dropped; if distinct, retained for the west coast uncinoids, according to the diagnosis. After an examination of a large series of specimens collected by Mr. Xantus at Cape St. Lucas, I am confirmed in the belief that the Cumingian shell is a distinct species, which must stand as C. mediolæve.
- 197. Cerithium gemmatum=Rhinoclavis gemmatus, M. 389. So much confusion has arisen from raising specific names to the generic peerage, that whenever a good distinct name has been given, it appears best to retain it—the unbending rule of mere priority for work which is sometimes slovenly, and therefore best forgotten, notwithstanding.
- 198. Cerithium? interruptum, C. B. Ad. (non Mke.=M. 388). Great confusion has arisen from this erroneous determination, as may be seen by comparing the Maz. Cat. in loco with the monograph of Sowerby, jun., who has redescribed the southern, highly sculptured forms of the true interruptum as C. galapaginis.
- 198 and 199 are regarded by Messrs. Cuming and Sowerby as varieties of
- 200. Cerithium irroratum, C. B. Ad. (Gld. ipse et MSS., non Gld. in Expl. Exp.) = C. stercusmuscarum, M. 387. The aspect of the Panama shells is so different from that of the Mazatlan specimens that I did not wonder at Dr. Gould's opinion that they were distinct. He was, however, misled in affiliating the former to his C. irroratum, of which I fortunately discovered the figured type in the Smithsonian Institution, and which proves to be (according to Mr. Cuming) the C. obesum of Sby. sen., from the Philippines. It is fortunate therefore that the name may be entirely dropped. Some of the specimens of no. 198 graduate sufficiently closely to the Mazatlan form; those of no. 199 are intermediate; while those of no. 200 present a stronger but smaller shell, well armed with small nodules, which are not to be seen in the fine Gulf specimens.
  - 201. Cerithium neylectum = Cerithiopsis n.
  - 202. Cerithium pacificum. Stet.

- 203. Cerithium pauperculum is a good, new species of Chrysallida. The Professor probably did not recognize the Chemnitzoid apex and the Odostomoid plait. The following alterations may be made in the diagnosis:—Shell pale orange [not horn], with six [not five] keels on the spire; spiral ridges anteriorly fainter [not obsolete]; apex sinistral [not acute], of three Paludinoid whorls, the last large in proportion; columella effuse [not canaliculated], with a long, slender, slanting plait.
- 204. Cerithium pulchrum=Cerithidea p. A distinct and truly beautiful species, seldom obtained by collectors.
  - 205. Cerithium reevianum = Cerithidea montagnei, M. 394.
- 206. Cerithium validum = Cerithidea varicosa, M. 395. The Southern shells, in all their changes, present such a different aspect from the Gulf specimens, that I am inclined to regard the form Mazatlanica as distinct, of which C. albonodosa may prove a variety.
  - 207. Triphoris alternatus, M. 391.
- 208. Triphoris inconspicuus is scarcely even a variety of the last; and does not differ so much as the specimens described under the same name, M. 392.
- 209. Triphoris infrequens is not the shell described, under the same name, M. 393, but is the Cerithiopsis tuberculoides, M. 557. It would have been strange if I had recognized the shell from the diagnosis; for both of the specimens are dextral. The apex is nearly smooth. I forbear to redescribe nos. 392, 393 of the Maz. Cat., as they were separated principally in deference to Prof. Adams's authority, until more numerous specimens should have been examined.
  - 210. Turritella banksii = T. goniostoma, jun., M. 379.
- 211. Cæcum diminutum = Cæcum firmatum, jun., with numerous close rings. All the Professor's specimens of this genus were dead; most of them pierced by Proboscidifers. They fully confirmed the judgments I ventured to form of them in the Maz. Cat. and in the "Monograph of the Cæcidæ," P. Z. S. 1858, p. 413 et seq.
- 212. Cæcum eburneum = C. firmatum. The rings vary from twenty-six to thirty-three.
- 213. Cæcum firmatum, M. 368. Add to the diagnosis in Maz. Cat. p. 320, last line, "operculo vix concavo, suturis minus definitis."
- 214. Cæcum læve. The two specimens are too worn for identification, but will pass sufficiently for the species described under the same name, M. 372.
- 215. Cæcum laqueatum. A good species of the Elephantulum group: v. Maz. Cat. p. 315, and P. Z. S. loc. cit. p. 420.
  - 216. Cæcum monstrosum = C. firmatum in the adolescent stage.
- 217. Cæcum parvum turns out, as was expected, to be=C. undatum, M. 371. The unique specimen is stunted and dead.
  - 218. Cæcum pygmæum is a small but nearly adult C. firmatum.

- 219. Chemnitzia aculeus, M. 521.
- 220. Chemnitzia acuminata is a true Chemnitzia, and not a Chrysallida, as supposed in the Br. Assoc. Report, p. 334. The name misleads, as it is a peculiarly broad species. The vertex consists of three Paludinoid whorls, of which the apex is visible, projecting a little beyond the spire. The ribs, instead of "terminating abruptly on the periphery of the last whorl," become gradually evanescent round the base.
- 221. Chemnitzia affinis. Comp. M. 523, which was identified from Mr. Cuming's specimen. The diagnosis needs the following corrections from the type. The "ribs terminate" not very "abruptly at the periphery." Anteriorly very finely striated [not "smooth"]. "Last whorl" not "angular at the periphery." Base prolonged. It is probably the adult form of my Chemnitzia undata, M. 531, the characteristic fine, waved, spiral striæ having escaped the Professor's notice. The only difference is that the ribs evanesce more suddenly in the Panama than in the Mazatlan shell, which may be due simply to age.
- 222. Chemnitzia clathratula, part. = Chrysallida clathratula, M. 513, which was identified from the Cumingian specimen. The specimens preserved as types contain, along with this species, one of Chrysallida communis, one (almost certainly) of Chrysallida effusa, M. 510, and one of Dunkeria subangulata, M. 537. Some parts of the description appear taken from the latter species: e. g. the "five or six" spiral lines, of which there are only four in the Chrysallida; and the angle on the "upper part" of the whorls, which in the latter are well rounded.
- 223. Chemnitzia communis, M. 507. This is the type of the genus Chrysallida: v. M. pp. 416, 420. Prof. Adams's tray contains also one specimen of Chrysallida effusa, M. 510; one of Chrys. telescopium, M. 508; one of Dunkeria subangulata, M. 537; and one which may be a variety of the latter, or a distinct species.
- 224. Chemnitzia gracilior. The "well-impressed spiral line" is only seen in some of the whorls.
- 225 Chemnitzia major belongs to the section Dunkeria. I counted eighteen (not twenty-four) ribs.
- 226. Chemnitzia marginata is a good species of Chrysallida; but I could not find the "spiral, compressed ridge."
- 227 Chemnitzia panamensis, M. 518. I counted twenty-four (not twenty-seven) ribs. The tray also contains one specimen of
- * As several errors are here pointed out in the diagnoses of small shells, it is right to state that Prof. Adams had not the advantage of a microscope during a considerable portion of the work; nor was the instrument a good one when obtained. Moreover the incessant demands on his attention as Professor of Astronomy and Mathematics, as well as of Natural History, and his duties as State Geologist of Vermont, did not leave him much time for original research. What he accomplished during his short life is marvellous. Had that life been spared to revise his works, the necessity for this friendly criticism would not have arisen.

- Ch. C-B-Adamsii, M. 519, with straight ribs; and one with spiral sculpture, which may belong to Ch. gracillima, M. 530, but wants the produced apex.
- 228. Chemnitzia similis. This species most nearly resembles aculeus, but is broader, larger, and with more ribs, of which I counted from twenty to twenty-two (not twenty-six). I should not call the whorls "convex." They are, however, more rounded, and the base is more produced, than in the shell called "? similis," M. 520, which is perhaps a variety of panamensis.
- 229. Chemnitzia striosa. The early whorls are very slender. The spiral striæ are on the tops of the ribs, of which I counted from twenty-four to thirty-two (instead of "about forty").
- 230. Chemnitzia turrita. This species includes the "Rissoa, sp. ind." no. 251.
  - 231. ? Littorina angiostoma is a Fossarus.
- 232. Littorina aspera, M. 397. The Mazatlan periwinkles, being in good condition, divide themselves very naturally into three species. The Panama specimens, being generally eroded, are not so easily dealt with. Of Prof. Adams's specimens here retained, the majority belong to aspera, although several of the smaller ones are philippii, M. 393. The young appear to be of both species mixed. The "variety" consists of the abnormal tall specimens of conspersa, M. 396, with a few very large philippii intermixed.
- 233. Littorina atrata. This abundant little shell is a Fossarus, of which the Professor's ? Adeorbis abjecta, no. 257, is a more advanced form. It is possible that one of the Fossari described in Maz. Cat., nos. 404, 405, may be conspecific; but among the multitude of specimens I could not find one with the nuclear whorls sufficiently perfect to decide. The shells vary extremely in shape and sculpture.
- 234. Littorina conspersa, M. 396. Smaller and generally more stumpy than the Mazatlan shells, but containing a few specimens of the same extreme forms.
  - 235. ? Littorina excavata=Fossarus e.
- 236. Littorina fasciata, M. 400. The specimens of this species and of L. varia graduate rather closely towards each other.
- 237. ? Littorina foveata. A good species of Fossarus. Read, "Last whorl angular" at the umbilicus [not "below the middle"].
- 238. ! Littorina megasoma. This is also a good species of Fossarus. The Professor was doubtful whether to refer these forms to Littorina or to Narica.
- 239. Littorina? parvula, C. B. Ad. This is not Philippi's L. parvula, but is a dwarf form of the L. philippii, M. 398. The Professor suggests the name L. dubiosa for this sufficiently well-marked species; but as he catalogued and distributed his specimens under? parvula, and kept others under aspera, it may be best to retain

the name philippii under which it has been very extensively curalated.

- 240. Littorina pulchra. A very rare species, belonging (with fasciuta and varia) to the Melaraphe group.
- 241. Littorina puncticulata. This is the normal state of L. conspersa: v. M. 396.
  - 242. Littorina varia: v. note on P. 236.
- 243. Rissoa clandestina. Three specimens appear of this species of Rissoina, closely resembling R. woodwardii, M. 410, but with more ribs, and not displaying the intercostal striulæ.
- 244. Rissoa firmata. Another species of Rissoina, resembling R. stricta, M. 408, but smaller. The Professor did not observe the fine spiral sculpture, as described in no. 250; q. v.
- 245. Rissoa fortis. A good species of Rissoina, differing from R. janus in the absence of spiral punctures.
- 246. ? Rissoa inconspicua, C. B. Ad., non Alder. The name being preoccupied, it is fortunate that the unique shell proves identical with Alvania tumida, M. 414. I found twenty (not "twelve or fourteen") ridges, which are not "obsolete," but become fainter anteriorly. The two upper whorls are very finely cancellated.
- 247. Rissoa infrequens. The unique specimen of this Rissoina is too much worn for description. It has more than the sixteen ribs; and the diagnostic marks must be received with caution.
- 248. Rissoa janus. The description of this Rissoina is drawn from a very small, dead, broken specimen, from which the sculpture is almost entirely worn away. The "var. a" should be considered as the type, being in perfect condition, and the diagnosis be altered as follows:—The "fine crowded spiral striæ" are seen all over, as are also the "ribs," which on each whorl "appear as striæ," and are not "obsolete near the periphery." The diagnostic character is that the spiral striæ are composed of rows of minute dots.
- 249. Rissoa notabilis. After drawing this unique shell carefully under the microscope, and making copious notes on the diagnosis from the specimen, an untoward cough lodged it among the meshes of the Curator's carpet, whence I endeavoured in vain to extricate it. This unfortunate accident is, however, the less to be regretted, as I can state with perfect confidence that it was exactly identical with another shell in the collection, P. 255, q. v.; and with M. 498, Parthenia quinquecineta. The "concave summits" of the ribs imply that the ribs are sharp, with concave interstices; and the "upper keel" is simply due to the angulation of the whorls. Though the lip was broken, the columellar plait, as well as the sinistral apex, escaped the Professor's notice.
- 250. Rissoa scalariformis. This unique specimen is simply the young of Rissoina firmata, P. 244; and probably = Rissoina sp. ind. M. 409.

- 251. Rissoa, sp. ind. This is a broken specimen of Chemnitzia turrita, P. 230.
- 252. ? Cingula inconspicua. This unfortunate name, liable to be confounded with Rissoa inconspicua, Alder, and ? Rissoa inconspicua, C. B. Ad., will not be needed, as the type belongs to another suborder, and = Chrysallida ovulum, M. 512. The Professor did not observe its close relationship with his Chemnitzia communis.
  - 253. Cingula paupercula, C. B. Ad. A good species.
- 254. ? Cingula terebellum = Parthenia exarata, M. 501. Although I took every pains, in preparing the Maz. Cat., to identify Prof. Adams's species, I was not prepared, in the writings of so careful a naturalist who had devoted special attention to the minute species, to find a Pyramidellid under Trochidæ, especially with the mark "apex subacute." The finding of a more perfect Mazatlan specimen enables me to add to the diagnosis:—"vertice nucleoso parvo, satis extante, decliviter sito; interstitiis carinarum transversim rugulosis; labro solidiore. Long. '087, long. spir. '057, lat. '038."
- 255. ? Cingula turrita (+P. 249, Rissoa notabilis) = Parthenia quinquecincta, M. 498. When a shell is described under two genera in the same sheet, the advocates of unbending priority will find it difficult to decide. As each name belongs to a widely removed family, that last given is at least the most correct and distinctive.
- 256. ? Litiopa saxicola. The Professor states that this "shell has the appearance of a Litiopa;" but it wants both the peculiar nucleus and the semitruncated columella; also that the "labium has a distinct deposit," of which I could not see any trace in either of the specimens. It is probably a Cingula.
- 257. ? Adeorbis abjecta. This is the adult form of the shell, of which P. 233, Littorina atrata, is the young. The strice are seen on the lower as well as the "upper part of the whorls." The umbilicus, though "small" for an Adeorbis, is rather large for a Fossarus, to which genus the species undoubtedly belongs.
- 258. Vitrinella concinna. I could not find the "more or less distinct ridge between the first two keels."
- 259. Vitrinella exigua=M. 305. The omissions in the Professor's diagnoses of this and other species, being supplied in the Maz. Cat., need not be repeated here: v. M. pp. 236-247.
- 260. Vitrinella janus. The Professor does not mention the fifth keel, which bounds the umbilicus, and within which are the "minute spiral striæ." The "transverse striæ" are strong between keels 2, 3, and 4; faint between 4 and 5, and between 1 and 2; and evanescent near the suture.
- 261. Vitrinella minuta. The original type of this species accords better with Ethalia than with Teinostoma, to which I had referred the Cumingian type.
  - 262. Vitrinella modesta. The "modesty" of this unique shell is

coordinate with considerable attrition, and an umbilicus tilled with dirt. It appeared to me regularly rounded, without any keel. The "few spiral strize" are probably the remains of what once covered the whole surface.

- 263. Vitrinella panamensis=M. 295.
- 264. Vitrinella parva=M. 296.
- 265. Vitrinella perparva=M. 304. The coronation of the upper keel is seen (though not described) in the type specimen.
- 266. Vitrinella regularis. The unique shell can hardly be called "subdiscoidal," since the "spire is convex, moderately elevated." I could not find the "impressed spiral line." It belongs to Ethalia.
- 267. Vitrinella seminuda. The unique type of this species also is much worn. I could not discover the "minute striæ of growth." Beneath, there are five spiral liræ, and a few spiral striæ near the mouth. The umbilical region and the base have fine radiating distant striæ. It comes nearest to V. carinulata, M. 309, but is distinct.
- 268. Vitrinella tricarinata. This unique type is also worn. The spiral keels are scarcely "prominent," that on the periphery being decidedly faint. The "transverse striæ" are between the suture and the nearest rib. The umbilical striæ are very faint.
- 269. Vitrinella valvatoides. This species probably belongs to Ethalia. Beside the keels, there are three obsolete spiral liræ—two on the base, and one above the periphery. The umbilicus is bounded by a long, thin callosity, which gives a character to the shell intermediate between the two genera.
- 270. Solarium, sp. ind. a. Of the form represented by this species and the next I have been able to examine a large number of specimens collected at Cape St. Lucas by Mr. Xantus, and in the Gulf of Mexico. I know of no mark by which to distinguish the shells from the two oceans. From each locality they vary greatly in the size of the umbilicus, and in the strength of sculpture, number of knobs, &c. I should consider them all as varieties of S. granulatum, Lam. S. quadriceps, Hds., appears distinct, though it may only be an extreme variety.
- 271. Solarium, sp. ind. b. This contains the specimens with coarser sculpture than the last.
- 272. Solarium, sp. ind. c. This is a distinct species of Torinia, having the size and general aspect of Helix rotundata.
  - 273. Trochus catenulatus = Modulus c., M. 401.
- 274. Trochus coronulatus = Omphalius c. This species reappears at Cape St. Lucas, and is closely allied to O. ligulatus, M. 293.
- 275. Trochus leanus = Calliostoma l. This distinctive generic name is strongly to be preferred to the specific Ziziphinus.
- 276. Trochus lima. This shell exactly accords with Calliostoma antonii, Koch, in Mus. Cuming.

- 277. Trochus lividus = Modulus disculus, M. 403.
- 278. Trochus panamensis = Omphalius p. A good species, though apparently very rare; for I had the pleasure of adding it to the Cumingian collection.
  - 279. Trochus pellis-serpentis=Tegula p.
- 280. Trochus reticulatus=Omphalius viridulus, M. 292. This is the common Trochid of the Panama region, as is ligulatus of the Mazatlan.
- 281. Turbo buschii = Uvanilla inermis, M. 287. This shell appears to replace U. olivacea in the southern fauna. Besides the differences indicated in Maz. Cat. p. 229, the operculum is quite distinct.
- 282. ? Turbo phasianella=Collonia ph.: not (Melaraphe) phasianella, Phil.
- 283. Turbo rutilus. The unique type is in miserable condition, to which the "bright red with pale streaks" is owing. The shell may possibly have been originally a Pomaulax undosus, which is truly a Lower Californian species. It appears, however, to be a favourite with sailors, as specimens are continually appearing, not only high and low on the West Coast, but also from the Pacific Islands. The specimens brought by Comm. Wilkes's U.S. Expl. Exp. were obtained in N. S. Wales! Prof. Adams's fragments were probably due to ballast.
- 284. Turbo saxosus = Callopoma saxosum. This replaces the C. fuctuosum of the Gulf, M. 282, and the C. tessellatum of Lower California. The "var. depressum" of P. Z. S., 1855, I believe to be really a Senectus from the Pacific Islands.
- 285. Scalaria hexagona, C. B. Ad.: non Sbv., M. 564. The Professor's shell is (I think) one of the species I described in P. Z. S. from Mr. Bridges's collection; but the distinctions in this genus are too critical to decide without comparison of types. This shell is broad; whorls very separate; varices long and sharp; spirally finely striated.
- 286. Scalaria obtusa, C. B. Ad.; ? non Sby. This also appeared to me one of Mr. Bridges's species. It is a very pretty shell, with close, sharp, coronated varices.
- 287. Scalaria, sp. ind. a. Like the next, but larger, and with spiral strize between the extremely crowded, sharp varices.
- 288. Scalaria, sp. ind. b. Of the Clathratula type, without spiral sculpture.
- 289. Scalaria, sp. ind. c, is probably the young of Circotrema funiculatum, M. 569, which, with its congeners, may be removed to Opalia.
- 290. Eulima iota. This shell, which is a Leiostraca (not "? Stylifer"), is probably distinct from the Mazatlan form, M. 555, which should stand as L. retexta.

192

- 291. Eulima recta. The type is a very good species of Leiostraca; but I doubt its identity with the Cumingian specimen, with which the Mazatlan shell, M. 550, was compared. It most resembles the L. linearis, M. 554, with which it agrees in divergence and general shape; but that is very much smaller, with the upper whorls more tumid. In the Professor's type of L. recta, I searched in vain for traces of the "two brown spots." They were probably thrown by defective light. The "two opaque spiral bands", are simply the effect of the suture, and the previous whorl showing through. For the Mazatlan shell, M. 550, I propose the name of L. involuta.
- 292. Eulima solitaria. This also is a Leiostraca, not "? Stylifer," and accords exactly with the Leiostraca, sp. ind. a, M. 552, but not with the supposed L. solitaria, M. 551. The latter agrees in shape with the unique Panama shell, whorl for whorl; but its base and labrum are much more produced anteriorly. For this reason, it may be known as L. producta.
- 293. Pyramidella, sp. ind. This is probably the Obeliscus described in Maz. Cat. no. 486.
- 294. Pyramidella conica = Obeliscus conicus, C. B. Ad., not M. 486.
- 295. Natica chemnitzii = N. maroccana, M. 570. The Professor first labelled these shells "N.? maroccana, Chem.," but crossed it off in pencil. Another tray appeared (without number) labelled "?unifasciata, Lam." They all belong to the large West Coast form of maroccana. [N.B. The shells described in P. Z. S. as "var. californica," on the authority of the late Mr. Nuttall, are (with others from the same source) undoubtedly from the Sandwich Islands. The Pacific specimens (of which I have examined many thousands, brought by Comm. Wilkes's E. E.) present a very different type from those of the west coasts of Africa and America; but are regarded by Mr. Cuming as only a local variety.]
- 296. Natica? lurida. These shells are simply a pale variety of N. maroccana.
- 297. Natica otis, C. B. Ad. (not Brod. & Sby.). These shells appear to be the young of Polinices "salangonensis," P. 298.
- 298. Natica? salangonensis. I had no opportunity of comparing this Polinices with the species of Récluz.
- 299. Natica souleyetiana. The shells closely resemble N. maroccana, but with a larger unbilicus.
- 300. Natica ? virginea, C. B. Ad. (not Récl.) = Polinices uber, M. 576.
- 301. Natica, sp. ind. a. There is no ticket answering to this number, which was probably intended for the N. maroccana, var. "unifusciata."
- 302. Natica, sp. ind. b. The shells are marked e, and are the young of Polinices uber, P. 300, M. 576.

193

13

- 303. Natica, sp. ind. c. The shell is marked f, and is probably = N. haneti
- 304. Nerita scabricosta=M. 326. After examining a multitude of specimens from different parts of the coast, I have not the slightest doubt of the identity of the forms called ornata and deshayesii.
  - 305. Nerita, sp. ind. a=N. bernhardi, M. 327.
  - 306. Neriting guayaquilensis. Stet. + N. intermedia, Sby.
  - 307. Neritina picta = M. 329.
- 308-316. Stent. The shells described as "Auricula" belong to Melampus.
  - 317. Truncatella bairdiana. A good species.
- 318. ?? Truncatella dubiosa. This belongs to Hydrobia or some similar Rissoid.
  - 319. Bulla (Tornatina) infrequens=Tornatina i., M. 222.
- 320. Bulla (Cylichna) luticola = Cylichna l., M. 221. The Mazatlan shell is much more constricted than most of Prof. Adams's specimens.
- 321. Bulla punctulata=B. adamsi, M. 224. The B. punctata, A. Ad.=B. punctulata, A. Ad., but is not the B. punctulata, C. B. Ad. MS. on ticket.
  - 322. Bulla, sp. ind. = Tornatina carinata, M. 223.
- 323. Vermetus ? glomeratus, C. B. Ad. (not Bivonia glomerata, Lam.)=V. eburneus, M. 354. The shells sometimes assume a rufous tint in the later whorls, in which state (if the Turritelloid apex be concealed) it is liable to be confounded with Aletes centiquadrus. Some of the Professor's shells belong to the latter species.
- 324. Vermetus panamensis, C. B. Ad. (? Rouss.) = Aletes centiquadrus, M. 352.
- 325. Stomatella inflata is a Lamellaria with broken lip and very much curved columella: v. M. 577. [A Sigaretus, with somewhat sharper columella than the ordinary W. Indian form, was found among the Professor's duplicate Panama shells; but as it does not occur either in the catalogue or the collection, it was probably dropped in from the Jamaica series.]
- 326. Hipponyx, sp. iud. Of the Professor's "two small specimens" marked "subrufa, jun.," one is H. grayanus, jun., M. 350. The other may be the same, but is probably the young of H. barbatus. Neither are sufficiently perfect to determine with confidence.
- 327. Hipponyx?barbata. Part of these specimens belong to H. barbatus, M. 349; part to H. grayanus; part are too much worn to determine; and one is a valve of Discina cumingii.
- 328. Hipponyx panamensis = H. antiquatus, M. 347. The species is very widely diffused, and varies greatly in each locality.
  - 329. Hipponyx radiata=H. grayanus, M. 350. The collection 194

also contains a tray labelled "Panama: C. B. Ad. don.," in which are Hipponyx serratus, M. 346, H. barbatus, and Gadinia pentagniostoma, M. 270. This last name should be dropped, except as a variety of G. stellata, Sby., which is the normal state: v. B. A. Rep. 1857, pl. 7. f. 3, a-g.

- 330. Calyptræa aberrans. The Professor candidly allows that "in texture this shell much resembles a valve of an Anomia," which it undoubtedly is, the supposed "probably imperfect cup" being the ligamental pit. The large muscular scar is very clearly developed; but the others are faint, as is customary in young shells, and might stand for either Anomia or Placunanomia. The valve is thin and glossy inside. The outside is smooth, excepting the lines of growth, and is encrusted with beautiful zoophytes. A tiny Serpula, which has colled itself close to the umbo, carries out the idea of a Calyptræid spiral apex; but a careful microscopic examination displayed the true Anomoid nucleus, at a little distance from the margin, as is common in the Mazatlan specimens of A. lampe, M. 219.
- 331. Calyptræa (Syphopatella) aspersa = Galerus conicus, very worn and young, with the lamina broken away. One of the specimens may perhaps be mamillaris.
  - 332. Calyptræa cepacea=M. 345.
- 333. Calyptræa conica. These are dead specimens, of which a few may be the true Galerus conicus, M. 332. But most of them belong to the brown-tinted variety of (the Professor's G. regularis=) mamillaris: v. no. 340.
  - 334. Calyptræa dentata = Crucibulum imbricatum, M. 343.
  - 335. Calyptraa hispida = Crucibulum spinosum, M. 344.
- 336. Calyptræa imbricata. The two specimens are too much worn to affiliate with confidence, the cups being broken out. The outside is ribbed, with arrow-headed strike between the ribs. They probably = Crucibulum i., var.
- 337. Calyptræa maculata = Crucibulum spinosum, M. 344. See the attempt to unravel the confusion in the synonymy of this family in Maz. Cat. pp. 264-295. Three specimens marked by the Professor "C. maculata, var.," are young, dead radiata, no. 339.
- 338. Calyptræa planulata. This unique shell is simply a young, flat C. cepacea, with the cup prominent, and the outside sculpture faintly developed, from living in a hollow place. The striæ are not "obsolete around the apex."
- 339. Calyptræa radiata = Crucibulum r. This rare and beautiful species is quite distinct, even in the early stages, from all varieties of C. spinosum.
- 340. Calyptræa (Syphopatella) regularis=Galerus mamillaris, M. 333.
  - 341. Calyptræa umbrella=Crucibulum u. (= C. rudis, Brod.).
    195

- 342. Calyptræa ??unguis, C. B. Ad. = Crucibulum spinosum, jun. (not Galerus unguis, Brod.).
- 343. Crepidula cerithiicola. Most of the specimens are the young of C. onyx, M. 340; but a few are of C. incurva, M. 339.
  - 344. Crepidula echinus = C. aculeata, M. 334.
  - 345. Crepidula excavata, M. 337.
  - 346. Crepidula? hepatica=C. onyx, M. 340.
- 347. Crepidula incurva, M. 339. A very interesting series of specimens; of which two or three are probably the twisted form of C. onyx. One tray contains specimens adhering to other shells. One, fixed diagonally on a Calliostoma, takes exactly the arrowheaded sculpture of the var. Cal. imbricata, Brod. Another, grown diagonally on Pisania gemmata, has the general aspect of a Chiton. One, fixed on the back of its neighbour which has grown on a Calliostoma, has the granular interruptions of the ribs transmitted through the first specimen. The same is true of one which has grown on another which was planted on a Pisania. One specimen, which had established itself on a Calliostoma, and began with normal ribs, is losing these at the margin, adopting the sculpture of the Trochid. An extremely twisted specimen in the tray of separate shells has a bifid deck. A young one had edged itself into the apical part of the deck, as into a maternal pouch; so the old one made a fresh deck over it.
- 348. Crepidula lessonii. Most of the specimens are of C. nivea, var., M. 341. Two shells, which have the apex perfect, display the characteristic nuclear riblets. One dark-coloured specimen may be a hybrid, and another (though too much worn for confident affiliation) appears to be C. unguiformis. Among the duplicates, all the specimens which were perfect at the apex presented the niveoid nucleus, though white; but generally the riblets were more or less worn off
- 349. Crepidula squama. These are the flat form (mostly dead and worn) of C. nivea, M. 341. Some of them pass into lessonii. Some are highly coloured, and may be the young of C. onyx; one even of C. incurva. One of the young shells in phial appears to be C. onyx; but whenever the apex is perfect, it presents the typical riblets: v. Maz. Cat. in loco.
- 350. Crepidula unguiformis. The apex being hidden in dead shells, which I was not at liberty to break away, I could only examine one specimen, which appeared to be a C. nivea, var., as supposed in Maz. Cat. p. 285. Of the loose specimens, scarcely any are sufficiently perfect at the apex to speak with confidence. Most of them, however, have the characteristic painting of the variety squama; and all may belong to the common species (C. nivea), except one which is a true C. unguiformis, M. 342, on the back of another shell, and a few which are probably C. onyx, var. Of the duplicates, which I was at liberty to extract from the dead shells,

some we undoubtedly C. nivea; others truly C. unguiformis; and others probably C. nivea, but with the riblets worn away by the crabs.

- 351. Crepidula nivea, M. 341. The specimens are small and poor; mostly rough, of the variety striolata passing into lessonii. Wherever the apex is perfect, it presents the characteristic riblets, but is generally white, not brown as in most of the finely grown Mazatlan shells.
- 552. Crepidula osculans. This is a perfect and extremely beautiful specimen of Scutellina navicelloides, M. 269. The Professor did not observe the non-spiral patelloid apex, and regarded the "navicelloid" columella as an extremely narrow deck. To the diagnosis in the Maz. Cat. may now be added "apice obtuso, sublavi; vertice haud spirali, vix conspicuo."
- 353. Crepidula rostrata=C. adunca, M. 338, ?non Sby. The examination of a large series of specimens from the temperate fauna has led me unexpectedly to confirm Mr. Reeve's opinion that they are distinct. The northern shell is C. adunca, Sby. (=Garnotia [Gray] solida, Hds.=C. rostriformis, Gld.); and the tropical shell must take the prior name, C. uncata, Mke. (=C. rostrata, C. B. Ad., Rve.=C. adunca, Maz. Cat., non Sby.).
  - 354. Fissurella æqualis=Fissurellidæa æ.
  - 355. Fissurella alta=Glyphis alta, M. 280.
  - 356. Fissurella macrotrema. Stet.
- 357. Fissurella microtrema. These are dead specimens, of which some are F. rugosa, var., M. 273.
- 358. Fissurella mus=Glyphis inæqualis, var., M. 279. These shells are intermediate between the typical form and pica.
  - 359, 360. Stent.
- 361. Fissurella virescens. It is doubtful whether any of the specimens are of the true virescens, M. 271, as they run into nigro-punctata by insensible gradations. Perhaps both species may prove identical.
  - 362. Siphonaria characteristica = S. gigas, var.
  - 363, 364, 365. Stent.
- 366. Siphonaria ? pica. These are young dead limpets (not Siphonariæ).
- 367. Lottia? patina, C. B. Ad. (non Esch.). These shells differ from Acmæa mesoleuca, M. 263, in being black instead of green, and are prettily striped.
- 368, 369, 370. Lottia, sp. ind. There may be two or even more species of Acmæa, but it is not impossible that there is only one among the professor's Lottiæ, some of the specimens being the young of? Patella, no. 371.

- 371. ? Patella, sp. ind. This has the general appearance of P. vulyata, but may be an Acmaa.
  - 372. Chiton clathratus. (Genus indet.)
- 373. Chiton dispar, C. B. Ad.; not Lophyrus dispar, Sby. I doubt whether any of the Professor's specimens belong to Sowerby's species, which is black mixed with grey; area-sculpture very faint; and sides imbricated, not rugulose. Among the duplicates were two (if not three) species:—the principal one with side sculpture in lobated knobs, which may be named Lophyrus adamsii; a ?variety with simple knobs; and a well-marked species without distinct side areas, which may be called Lophyrus tenuisculptus.
  - 374. Chiton ?luridus. Probably correct.
  - 375. Chiton pulchellus = Callochiton p. + C. elenensis.
  - 376. Chiton stokesii=Lophyrus s.
- 377. Anomia lampe, C. B. Ad. It is doubtful whether this is identical with the northern species, M. 219.
- 378. Anomia tenuis. This is probably the young of the last species, and may give it a name, if new. It is doubtful how the diagnosis of the scars was made out; as they were not visible in either of the specimens retained, being encrusted with dead animal matter. They were not distinct even after its removal.
- 379. Anomia, sp. ind. a. Probably the same species as the two last, although far too dead, worn, and young to decide. See notes on the variations of A. lampe, Maz. Cat. p. 168.
- 380. Ostrea, sp. ind. a. The hinge notches of the upper valve fit between corresponding teeth in the lower. Inside rather flesh-coloured; white, round margin. Scar kidney-shaped, dark in one valve, light in the other. A young valve is white, and as pearly as O. iridescens, M. 211. The species is best known by its tendency to make a very broad limb in the exterior coloured part, spreading out into palmations. A very young specimen, though covered above with Membraniporæ, shows the characteristic corrugations through. It may stand provisionally as O. panamensis.
- 381. Ostrea, sp. ind. b. This is probably a variety of O. panamensis, but more coarsely grown, so that there is a smaller limb, without palmations. Wherever the sculpture appears, there are evident traces of the peculiar corrugations. The inside has the same characters, both of hinge, colour, iridescence, and scar.
- 382. Ostrea, sp. ind. c. Rather square hinge, without plications; one shell with an umbonal cavity. Pearly white. One specimen is tinted on the scar, which may become coloured in the adult. It is by no means "pentangular," and is more probably = 0. rufa, Gld., than O. columbiensis, M. 213.
- 383. Ostrea, sp. ind. d. The shells are broader than the Mazatlan specimens of O. virginica, M. 212, probably from not growing on twigs. The younger shells are very like O. edulis; the older ones

have hollow umbos. One long shell, first marked e, but altered to d, is the adult form; several of the younger shells are doubtful.

- 384. Ostrea, sp. ind. e. = Ostrea, M. 215. Being a good species, I propose the name of O. amara. The Professor's "small var." is not plicated, and appears to belong to O. conchaphila, M. 214. [N.B. Additional specimens confirm me in the belief that O. palmula, M. 214 b, is a distinct species.]
  - 385. Spondylus lamarckii, C. B. Ad. = S. calcifer, M. 208.
  - 386. Spondylus, sp. ind. a = Plicatula penicillata, M. 210.
  - 387. Pecten inca=P. ventricosus, Sby., as in errata.
  - 388. Pecten tumbezensis = P. aspersus, Sby., Hanl. (? Lam.).
  - 389. Lima angulata. Shells inflated, not gaping.
- 390. Lima pacifica (=L. arcuata, Sby., Haul.). Young shells, species uncertain.
- 391. Avicula ?margaritifera = Margaritiphora fimbriata, Dkr., M. 204 = M. mazatlanica, Hanl. = M. barbata, Rve.
- 392. Avicula sterna, M. 203. A. libella, Rve., appears to me the young of this species.
  - 393. Perna, sp. ind. a=Isognomon chemnitziana, M. 205.
- 394. Perna, sp. ind. b = I. chemnitziana, var. Rather more finely grown, and with less colour, but certainly the same species. The Professor's Jamaica specimens are labelled "bicolor, Ad."
  - 395. Pinna maura, M. 200.
- 396.  $\Gamma$  inna tuberculosa. Three of the specimens appear to me = P. maura, jun. The other may be the same, but is worn nearly smooth.
- 397. Mytilus, sp. ind. a. Resembles the young of Modiola brasiliensis, but with a few hinge-teeth, as in M. edulis.
- 398. Lithodomus, sp. ind. a. Most of these specimens are of Lithophagus aristatus, M. 176; one (perhaps two) are L. attenuatus, M. 173 (which is found from Lower California to Chili); and one appears to be L. plumula, M. 175; but they are too young to decide with confidence.
- 399. Modiola? semifusca. These specimens all belong to the M. brasiliensis, M. 171, but are much more like the ordinary Brazilian specimens than are those from Mazatlan. As compared with the latter, the Panama shells are more rounded, with stronger posterior grooving, and with the angular ridge less marked. A similar shell, undoubtedly from New Zealand, is considered by Mr. Cuming conspecific.
- 400-404. Modiola, sp. ind. a, b, c, d, e. I could find no a or e in the collection; but there were two trays marked f. Tray b=M. capax, M. 170. c contains several specimens of Mytilus multiformis, M. 168, strongly ribbed variety, perhaps intended for b, no. 401.

d contains parts of six specimens, and perhaps should be a, no. 400. They appear to be a variety of Lithophagus cinnamomeus, M. 177, but with broken shells, &c., agglutinized on the posterior side. f(l) contains four specimens of M. multiformis, the semigreenish variety (Maz. Cat. p. 119), and are probably intended for c. f(2) contains two specimens of the same variety of M. multiformis, in the burrow of a Lithophagus, and may stand for d or e.

- 405. Chama buddiana = C. (!frondosa, var.) fornicata, M. 121, b. Additional specimens confirm me in regarding this species as distinct from all varieties of frondosa. The Professor's shells not being very characteristic, the diagnoses do not exactly accord. The shell stands as C. buddiana.
- 406. Chama? corrugata. The large valve appears a dead reversed C. (frondosa) mexicana, M. 121, with the teeth perforated by Lithophagi. The other may be corrugata, very dead, of sienna-tint, very pointed dorsally.
- 407. Chama echinata. These appear to me to be the young, partly of C. buddiana, but principally of C. mexicana.
  - 408. Nucula elenensis = Leda e., M. 199.
  - 409. Nucula exigua, M. 198.
  - 410. Nucula polita = Leda p. With semidiagonal lines.
  - 411. Pectunculus assimilis + P. inæqualis, M. 196.
  - 412. Pectunculus ?maculatus. Stet.
  - 413. Arca alternata = Barbatia a., M. 188.
  - 414. Arca ?aviculoides appears a young Scapharca.
  - 415. Arca emarginata=Scapharca e., M. 187.
  - 416. Arca gradata = Barbatia g., M. 194.
  - 417. Arca grandis, M. 180.
  - 418. Arca mutabilis = Byssoarca m., M. 190.
- 419. Area (Byssoarca) pholadiformis. This is simply an elongated form of Barbatia gradata, probably from growing in the hole of a Lithophagus. The umbos are "flattened" by erosion; teeth not "obsolete" under the glass; "ligament concealed" simply by the compressed and elongated growth.
  - 420. Arca reeviana = Barbatia r.
  - 421. Arca reversa=Noetia r., M. 185.
- 422. Arca similis. This is scarcely a variety of A. tuberculosa, M. 184. The specimens are dead and oiled, with most of the epidermis abraded.
  - 423. Arca solida=Barbatia s., M. 195.
  - 424. Arca (Byssoarca) tobagensis = Barbatia illota, M. 193.
  - 425. Arca tuberculosa, M. 184.
  - 426. Arca, sp. ind. a. These little shells approach the Noctia

type. Ribs fine, tuberculous, coarse on the angular side. Ligament very narrow, truncated.

- 427. Cardita affinis. (Lazaria.)
- 428. Cardita laticostata = Venericardia l.
- 429. Cardita radiata. (Lazaria.)
- 430. Cardium graniferum, M. 134.
- 431. Cardium obovale = Hemicardia o.
- 432. Cardium planicostatum, C. B. Ad., not Sby. This looks like a dead ballast-valve of Hemicardia media; but it may be H. biangulata.
  - 433. Cardium procerum, M. 125.
  - 434. Cardium senticosum, M. 126.
  - 435. Venus ?amathusia = Anomalocardia subimbricata, M. 113.
- 436. Venus discors = Tapes gratus, Say, M. 110. The Professor's specimens of this species and T. histrionicus are somewhat intermixed.
- 437. Venus gnidia, M. 101. Dead specimens; of which one may possibly be Chione amathusia, M. 102.
- 438. Venus multicostata. Closely resembling the West Indian form.
  - 439. Venus pectunculoides = Tapes histrionicus, M. 109.
  - 440. Venus subrugosa = Anomalocardia s., M. 112.
- 441. Venus, sp. ind. a. A small species with concentric laminæ, armed with one posterior row of blunt spines. Interstices with minute concentric striæ.
- 442. Venus, sp. ind. b = Chione crenifera, M. 105 = V. sugillata, Rvc. C. I. no. 43.
  - 443. Cytherea affinis. Probably = Callista concinna, var., M. 99.
  - 444. Cytherea aurantiaca = Callista aurantia, M. 92.
- 445. Cytherea consanguinea = Callista c. Messrs. H. and A. Adams have not made a subgenus to include this group of thin, inflated, almost colourless species.
  - 446. Cytherea radiata = Trigona r., M. 83.
  - 447. Cytherea squalida = Callista chionæa, M. 93.
  - 448. Artemis dunkeri = Dosinia d., M. 90.
  - 449. Artemis saccata = Cyclina subquadrata, M. 91.
  - 450. Gouldia pacifica, M. 116.
- 451. Cyrena maritima. Stet. The collection also contains two tubes, containing a very young "? Cyclas" and another "Cyrena, jun.," marked "Panama, C. B. Ad."
  - 452. Lucina tellinoides=Felania t. Differs from F. sericata,
    201

- M. 152, in having a yellow, not silky, epidermis. The specimens vary considerably in thickness. The genus scarcely differs from Miltha.
  - 453. Capsa altior=Iphigenia a., M. 69.
  - 454. Donax assimilis, M. 74.
  - 455. Donax gracilis. Stet.
  - 456. Donax navicula, M. 77.
- 457. Donax rostratus. This single valve proves to be the true D. carinatus, M. 71, and not the shell which I called D. culminatus, M. 72 (=carinatus, var., Hanl. in Mus. Cum.), which I subsequently affiliated to the supposed rostratus, Maz. Cat. p. 548, on the authority of Dr. Gould's specimen. We were probably both misled by the "very sharp angle," which (as compared with the other form) I should call rounded, and the "concave" surface, which I should translate into flat. The names have been altered in the Cumingian collection since the Mazatlan shells were identified; but Mr. Hanley informs me that they are now correct; that the D. culminatus, M. 72, is his own original carinatus; and that the D. carinatus, M. 71 (olim Mus. Cum.), which is certainly D. rostratus, P. 457, must stand under Prof. Adams's name.
  - 458. Tellina aurora. Stet.
- 459. Tellina cognata, C. B. Ad. = Psammobia casta, Rve., teste Cuming. The sculpture consists of semidiagonal strise passing over the lines of growth. In other specimens examined from Panama these are sometimes crowded, sometimes distant, occasionally flex-uous, sometimes almost evanescent.
  - 460. Tellina columbiensis. (Peronæa.)
- 461. Tellina concinna = Macoma c. The "slight tinge of pink" I could not discover.
  - 462. Tellina crystallina=Tellidora c.
  - 463. Tellina cumingii, M. 55.
  - 464. Tellina dombeyi = Macoma d., M. 50.
  - 465. Tellina felix, M. 51. (Angulus.)
  - 466. Tellina laceridens. (Peronæoderma.)
  - 467. Tellina prora. (Peronæoderma.)
  - 468. Tellina puella. Not unlike T. felix, and distinct from M. 59.
  - 469. Tellina rubescens. (Peronæoderma.)
- 470. Tellina siliqua. The two odd valves belong probably to a Macoma, in shape resembling Thracia phaseolina.
- 471. Tellina simulans=T. (Peronæoderma) punicea, M. 54. The species was described, for geographical reasons, from a young, pale, and undeveloped valve. On comparing it with the Professor's own West Indian specimens, I could detect no difference.

- 472. Tellina sincera=Strigilla s.
- 473. Tellina vicina = Heterodonax vicinus. The shells are labelled T. versiculor by the Professor. They are larger than the general run of West Indian specimens; but the form is probably a local variety of the old Heterodonax bimaculatus.
- 474. Tellina, sp. ind. a. The doubt concerning "concave" and "convex" probably arises from an error in description.
- 475. Tellina, sp. ind. b. Looks exactly like the young of No. 474, but with lateral teeth.
  - 476. Tellina, sp. ind. c. Dead valves of T. felix, No. 465.
- 477. Petricola cognata. More characteristic specimens from the same coast are affiliated by Mr. Cuming to P. pholadiformis, from which this would probably not have been separated had it appeared on the Atlantic coast.
- 478. Sazicava? tenuis. The Panama shell is more like Petricola than Sazicava, having two teeth in each valve, one of which is bifid. Sowerby's species is called by Messrs. H. & A. Adams "Sazicava tenuis" (ii. p. 349) and "Petricola tenuis" (ii. p. 441). Shell with very fine radiating strize, crossed by irregular strize of growth.
  - 479. Cumingia coarctata = C. lamellosa, var., M. 42.
  - 480. Cumingia trigonularis, M. 43.
  - 481. Cumingia, sp. ind. a=C. trigonularis, No. 480.
  - 482. Cumingia, sp. ind. b=C. var. coarctata, No. 479.
- 483. Cumingia, sp. ind. c=M. 45. This appears a distinct species, and may be quoted as C. adamsii, in remembrance of the labours of Messrs. H., A. and C. B. Adams.
- 484. Cumingia, sp. ind. d = Maz. Cat. tablet 107, p. 31; well rounded, with close strise. Probably distinct.
- 485. Amphidesma bicolor=Semele?venusta, M. 41 (non A. Ad.). The "species" in this genus are often separated by very variable characters.
  - 486. Amphidesma ?ellipticum=Semele e.
- 487. Amphidesma proximum. The type is not quite so elliptical as the last species; but as this is a very variable character (v. Maz. Cat. p. 28), I should regard it as the same. It is not the Semele proxima, M. 40 (=S. favescens, v. Maz. Cat. p. 548).
  - 488. Amphidesma pulchrum=Semele p.
- 489. Amphidesma striosum = Semele s. I should describe the shell as smooth, with very fine diagonal strice crossing the lines of growth. It has the general aspect of S. pulchra. The teeth in one valve are long and sharp.
  - 490. Amphidesma tortuosum = Semele t. Teeth short and faint.
  - 491. Amphidesma ventricosum = Semele v. The "zones" are very 203

- "ill-defined." Teeth scarcely visible. It looks outside like a dead valve of Macoma solidula.
  - 492. Crassatella gibbosa. Also found at Cape St. Lucas.
  - 493. Mulinia donaciformis=M. angulata, M. 80.
  - 494. Mulinia ventricosa = Mactrella exoleta, M. 78.
- 495. Lutraria elegans = Harvella elegans; ascribed by Messrs. H. & A. Adams to Florida (ii. p. 378), from which I have never seen it. It is a rare, but (under different names) somewhat widely diffused west-tropical shell. Its "analogue" from Florida and Carolina is Raëta canaliculata.
- 496. Mactra velata=Standella v. Vide M. 79. The "small variety" is conspecific.
- 497. Anatina alta. This valve of Periploma may prove identical with one of the four Gulf species. The spoon is supported underneath by a linear plate.
- 498. Pandora cornuta. It is singular that neither Prof. Adams nor Dr. Gould observed that the peculiar characters of this species are due to a fracture, producing a beak and sinus which are not seen on the lines of growth. The sentences about the "rostriform projection," the "sinus," and the "prominent angle," should therefore be erased from the diagnosis. The hinge-teeth consist of a long sharp tooth, very pointed, in one valve, fitting against a less prominent one in the other; a slight ligamental tooth in the first valve only; and a very long, sharp, clavicular tooth in each valve, running near the posterior margin, against the inside umbonal portion of which the ligament is attached. Should it prove identical with P. claviculata, the earliest name (as being given in error) may advantageously be dropped. It is surprising that Messrs. H. & A. Adams have not divided the old Lamarckian genus even into subgenera.
- 499. Potamomya æqualis. 500. P. inflata. 501. P. trigonalis. These three forms of Azara differ in outline, but not more than do some other species of Corbulids and such shells as Trigona radiata. The teeth, pallial lines, and general characters are the same in each. The first two I should consider certainly identical; and a large series of specimens would probably graduate to the third.
  - 502. Corbula bicarinata, M. 30.
  - 503. Corbula biradiata, M. 31.
  - 504. Corbula obesa. Stet.
  - 505. Corbula ovulata, M. 33.
- 506. Corbula rubra. A young orange-tinted specimen of C. bi-radiata, No. 503. The "broad flexure" is an accidental growth, not shown in the lines of growth of an earlier stage.
  - 507. Corbula tenuis. Stet.
- 508. Corbula, sp. ind. a. A very small angular valve, with sharp concentric ridges. It may belong to C. pustulosa, M. 32.

- 509. Corbula, sp. ind. b. Dead valves of C. biradiata, No. 503. To the same species may be referred C. polychroma. We were misled by the different appearance of the dead shell, and by the locality-mark in Col. Jewett's collection. His specimens were probably from Panama or Acapulco.
- 510. Solecurtus affinis, M. 37. It is probable that this species is identical with S. (? Novaculina) caribbæus. The Ariquibo specimens of the latter in Mus. Amherst are more like the Mazatlan shells than those are to the Panama type. Shells from Cape Palmas were affiliated to the Caribbæan species by Mr. Cuming.
- 511. Solen rudis=Ensatella r. This interesting form passes towards Pharella. It is called "Solena obliqua, Spengl., var." in Mus. Cuming.
  - 512. Pholas crucigera. With the general aspect of Barnea candida.
- 513. Pholas tubifera = Pholadidea t. Of the melanura type, with a solid tube fitting on to the ends of the cups.
- 514. Pholas xylophaga. Of the Martesia type, without cups. Dorsal and ventral plates long; umbonal plates moderate; wave of the adolescent gape rather suddenly arched.
- 515. Pholas —, sp. ind. a. Col. Jewett's specimens of the same shell are named laqueata by Mr. Cuming. It is of the non-waved, concameroid type; without radiating sculpture; concentric lamellæ beautifully frilled.
- 516. Pholas, sp. ind. b. So like P. dactylus that it might be taken for a worn valve from ballast. The sculpture-ridges are, however, further apart; hinge chambers larger and more numerous, with a little twisted lamina beyond; gape less conspicuous.
  - 517. Orbicula cumingii = Discina c., M. 14.

The shells unfortunately are all loose, in trays, with the autograph names on tickets. Prof. Adams's West Indian collections are in the same condition; and both series are arranged together, in zoological order, in the midst of the general collection. There is no evidence, however, that they have been handled since the Professor left them, none of the leading conchological writers in the New World having thought it needful to go out of their way to complete a review of the Professor's work. Amherst is situated on a branch railway, and is within an easy walk of Northampton, Mount Holyoak, and the delicious scenery of the Connecticut River. In the College buildings are also deposited the most complete series of the Fossil Footprints of the Connecticut River, and the mineralogical collection (including the meteorolites) belonging to Prof. Shepherd.

			·	ı
	•			
		·		

# DIAGNOSES

OF

# NEW FORMS OF MOLLUSKS COLLECTED AT CAPE ST. LUCAS BY MR. J. XANTUS.

BY

PHILIP P. CARPENTER, B. A., Ph. D.

From the Annals and Magazine of Natural History. Third Series, Vol. XIII., pp. 311-315, April, 1864. Ibid. (Nos. 15-36) pp. 474-479, June, 1864. Ibid. Vol. XIV. (Nos. 37-52), pp. 45-49, July, 1864.

(207)

•

#### **DIAGNOSES**

OF

# NEW FORMS OF MOLLUSKS

COLLECTED AT CAPE St. LUCAS BY MR. J. XANTUS.

BY

# PHILIP P. CARPENTER, B.A., Ph. D.

THE specimens here described belong to the Maseum of the Smithsonian Institution, Washington, D. C. The first available duplicates will be found in the British Museum or in the Cumingian Collection. An account of the labours of Mr. Xartus will appear in the forthcoming volume of British Association Reports; and detailed notes on the species may be consulted in the American scientific periodicals for the current year.

# Genus Asthenothærus*.

Testa extus "Thracia" similis: intus cardine edentulo, haud spathulato; cartilagine infra umbones sita.

# 1. Asthenothærus villosior.

A. testa inequivalvi, inequilaterali, umbonibus ad trientem longitudinis sitis; tenuissima, alba, (sub lente) omnino minutissime et creberrime pustulosa; rugis incrementi obtusissimis, irregularibus, maxime t. juniore, ornata; epidermide tenui, pallide olivacea induta; parte postica truncata, parum hiante; antica valde rotundata; marginibus dorsalibus et ventrali parum excurvatis; umbonibus angustissimis; regionibus lunulari et nymphali subcarinatis: intus, margine cardinali utriusque valvæ acuto; ligamento inconspicuo; cartilagine subspongiosa, satis elongata, postice deflecta; fovea haud indentata; cicatricibus adductorum parvis, subrotundatis; sinu pallii majore, ovali, ad dimidium interspatii porrecto. Long. 38, lat. 26, alt. 14 poll.†

^{* &#}x27;Aσθενήs, weak; θαιοόs, hinge.
† The measures of length are taken from the anterior to the posterior margins. The "detailed notes" are still in MSS.

14 209

#### 2. Solemya valvulus.

S. testa minore, tenuissima, diaphana, vix testacea, cornea, pallidiora, fineis tenuibus, distantibus, fuscis, radiatim ornata; postice tenuiter radiatim striata; tumente, satis elongata, marginibus antice et postico regulariter excurvatis; umbonibus vix conspicuis; lineus anticis divaricantibus, extus parentibus, intus lacunam cartilagineam definientibus; cardine edentulo; ligamento postice elongato, antice curto, latiore, bifurcato; cicatricibus adductorum subrotundatis. Long. 85, lat. 25, alt. 14 poll.

# 8. Tellina (Peronæoderma) ochracea.

T. testa majore, parum inæquilaterali, tenui, satis planata; carneoochracea, intus intensiore; lævi, nitida, marginem versus striis
incrementi; postice vix radiatim striatula; ventraliter antice
valde excurvata, postice vix angulata; marginibus dorsalibus obtuse angulatis, umbonibus conspicuis; ligamento tenui et cartilagine subinternis; nymphis intortis: dent. card. utriusque valvæ ii.,
quarum i. bifidus; dent. lat. valvæ dextræ ii.; sinu pallii irregulariter ovali, per duos trientes interstitii porrecto; cicatr. adduct.
subovatis, nitidissimis. Long. 1.9, lat. 1.4, alt. .44 poll.

# 4. Psammobia (? Amphichæna) regularis.

P. testa minore, regulariter ovali, subæquilaterali; violacea, plus minusve radiata seu maculata; lævi, striolis incrementi ornata; epidermide tenui, flavido-olivacea induta, postice rugulosa; marginibus undique regulariter excurvatis; umbonibus vix projectis; ligamento conspicuo: intus dent. card. ii.-i., haud bifidis; cicatr. adduct. postica rotundata, antica ovali; sinu pallii elongato, haud incurvato, per duos trientes interstitii porrecto. Long. 1.05, lat. .5, alt. .26 poll.

# 5. Callista pollicaris.

C. testa magna, ventricosa, solidiore; epidermide tenuissima induta; sordide albida, umbonibus rufo-fuscis; (t. adolescente) punctulis crebris rufo-fuscis, et tæniis paucis circa nymphas ornata; lævi, striis incrementi exceptis; postice, et paululum antice, quasi pollice impresso notata; latiore, antice producta, sed haud angulata; postice unda depressa, supra nymphas radiante, inter costas duas obsoletas sinuante, margine subtruncato; marginibus ventrali regulariter excurvato, dorsali rectiore; lunula elongata, linea impressa definita, medio tumente, postice flaccida: intus candida; dent. card. normalibus; dente laterali valvæ dextræ postico, valvæ sinistræ antico, usque ad extremitatem lunulæ porrecto; cicatradduct. subrotundatis; sinu pallii magno, rotundato, usque ad medium interstitii porrecto. Long. 2·58, lat. 2·25, alt. 1·43 poll.

Figured by Mr. Reeve (Conch. f. 45) as "Dione prora, var." The above diagnosis proves it to be a distinct and (considering the general similarity of the thin, colourless, inflated group) a well-marked species.

# 6. Callista (? pannosa, var.) puella.

C. testa "C. pannosæ" simili, sed multo minore, tenuiore, plerumque latiore; sinu pallii majore, eleganter incurvato; dent. card multo tenuioribus, lat. ant. magis elongato; lamina cardinali umbones versus sinuata: colore maxime variante; nonnunquam ut in C. pannosa triangulariter maculata; plerumque ut in Tapete virginea notata; interdum albida, seu aurantia, seu fusca, haud maculata; rarius ut in Tapete fuscolineata penicillata; rarissime paucistrigata, seu maculis paucissimis. Long. 66, lat. 5, alt. 32 poll.

Variat t. transversa. Variat quoque t. subtrigona, et formis intermediis.

Quoted by Mr. Reeve, under Dione pannosa, as "D. puella, Cpr."; but the name was only given in MS. in accordance with Mr. Caming's assertion that it was distinct. The colourless subtrigonal shells were regarded by Mr. Reeve as a separate species; but he did not allude to them in his monograph.

# 7. Levicardium apicinum.

L. testa subtrigona, parva, tenuissima, nitidissima, subcompressa, epidernide tenui induta; radiis seu striis radiantibus nullis; striis concentricis satis regularibus, subobsoletis, t. jun. magis extantibus; umbonibus angustis, parum incurvatis; margine ventrali satis excurvato, antico parum producto, postico subtruncato, dorsalibus obtuse angulatis: colore valde variante; plerumque pallide viridi-cinereo, rufo-fusco seu angulatim tæniato seu maculato seu punctato; regione umbonali plerumque pallida, interdum rufo-fusca seu aurantiaca; parte postica haud intensiore: intus plerumque citrina, hepatico varie penicillata: dent. card. et lat. acutis, tenuibus; margine minutissime subobsoletim crenulato. Long. .55, lat. .5, alt. .3 poll.

Variat t. latiore. Variat quoque colore fere omnino hepatico, seu carneo, seu pallide aurantiaco, seu pallide cinereo, seu albido: rarissime ut in Tapete fuscolineata ornata.

#### 8. Lucina lingualis.

L. testa solida, linguiformi, valde prolongata; plerumque aurantiacocarnea, intus intensiore; lirulis concentricis obtusis crebre ornata; marginibus undique excurvatis; lunula minima, altissime excavata; parte postica obscure biangulata, seu subrotundata; umbonibus anticis, incurvatis; ligamento subinterno, lamina valida; dent. card. et lat. normalibus, validis; cicatr. adduct. posticis subovalibus, anticis satis elongatis; linea pallii lata, rugosa; margine interno crenulato. Long. 88, lat. 92, alt. 4 poll.

Variat t. minus prolongata. Variat quoque t. pallide viridi, seu pal-

lide carnea, seu alba.

#### 9. ?Crenella inflata.

IC. testa valde inflata, minuta, albida, subrhomboideo-orbiculari;

# Dr. P. P. Carpenter on new Forms of Mollusks

diagonaliter parum producta; marginibus subquadrangulatim rotundatis; umbonibus prominentibus, valde antice intortis; tota superficie ut in C. decussata sculpta, costulis crebris radiantibus sequidistantibus, hic et illic aliis intercalatis; lirulis concentricis decussantibus: intus margine dorsali brevissimo, arcuato, dentato; ligamento curtissimo, in fossa omnino interna, celata, lamina definiente, sito; lamina cardinali sub umbonibus intus porrecta, dentibus validis instructa; marginibus internis omnino crenatis; cicatr. adduct. subsequalibus, ventraliter sitis. Long. 1, lat. 12, alt. 19 poll.

Located provisionally in *Crenella* from its likeness to *C. decussata*, but with peculiarities of hinge and adductors which approach *Nuculina* on one side and *Cardilia* on another.

#### Genus Bryophila*.

Animal Aviculidæum, viviparum: inter algas, etc., habitans.
Testa Pinnæformis, extus prismatica, intus subnacrea: ligamentum solidum: umbones extantes, terminales, intus concavi.

# 10. Bryophila setosa.

B. testa parva, regulari; cinerea, salmoneo seu chocolateo, intus submacreo, exquisite tincta: t. juniore planata, semirotundata, dorsaliter recta, sequilaterali, conspicue punctata: t. adolescente subdiaphana: t. adulta solidiore; umbonibus rectis, terminalibus,
intus alte excavatis; marg. dorsali breviore, recto; antico recto;
ventrali et postico late rotundatis: extus epidermide subspongiosa
vestita, radiis setarum subdistantibus, marginibus eleganter pectinatis: intus ligamento solido dorsaliter producto; limbo pallii
sequaliter prope marginem decurrente; cicatr. adduct. submediaua,
inconspicua; postice hiante; antice propter byssum tenuem sinuata. Long. 13, lat. 2, alt. 1 poll.

Like a minute *Pinna*, or a transverse *Margaritiphora* without ears, or an *Isognomon* without pits. Differs from the other Aviculids in being viviparous, like some other minute bivalves.

# 11. ? Atys casta.

?A. testa elongata, tenui, subdiaphana, albida; antrorsum paulum tumidiore; spira celata, lacunata, (t. adultæ) haud umbilicata; columella paulum intorta, effusa; umbilico antico minimo; labro postice producto, obtuse angulato; tota superficie subtiliter spiraliter striatula. Long. '4, lat. '18 poll.

On the confines of the genus, related to Cylichna.

# 12. Ischnochiton parallelus.

I. testa ovata, subelevata (ad angulum 120°); rufo-fusca, olivaceo tincta; valvis latis, marginibus parum rotundatis, interstitiis par-

Βρύον, sea-moss; φίλος, loving.

vis; valvis intermediis valde insculptis; areis lateralibus seriebus granulorum a jugo radiantibus circiter vi.; interdum irregularibus, granis rotundatis, separatis, extantibus; areis centralibus clathris creberrimis, jugo parallelis, horridis, extantibus, interdum granulosis, ornatis; valvis terminalibus seriebus granulorum, circ. xx., interdum bifurcantibus, ut in areis lateralibus, ornatis; mucrone vix conspicuo; limbo pallii angusto, pilulis furvicaceis creberrimis minutis conferto; lobis valvarum bifidis, terminalibus fiseris circ. xi. a parte externa simplici disjunctis. Long. 7, lat. 48, alt. 16 poll.

Belongs to the group with minute setose scales.

# 13. Ischnochiton (? var.) prasinatus.

I. testa I. parallelo forma et indole simili, sed vivide viridi; ar. diag. seriebus bullularum irregulariter ornatis; ar. centr. clathris valde extantibus, acutis, jugo obtuso parallelis, utroque laters circ. xvi.; valv. term. seriebus bullularum circ. xviii.; mucrone submediano, inconspicuo; umbonibus haud prominentibus; tota superficie minutissime granulosa: intus valvarum lobis mediarum i.- term. circiter x.-fissis; sinu lato, planato; suturis planatis; limbo pallii angusto, minutissime squamulis furvicaceis creberrime instructo; interdum pilulis intercalatis. Long. '8, lat. '4 poll., div. 125°.

#### 14. Ischnochiton serratus.

I. testa parva, cinerea, olivaceo hic et illic, præcipue ad suturas, punctata, interdum sanguineo maculata; ovali, subdepressa, suturis indistinctis; tota superficie minutissime granulata; ar. diag. valde distinctis, costis latissimis obtusis ii.—v. munitis, interstitiis nullis; marginibus posticis eleganter serratis; ar. centr. costis acutis, parallelis, utroque latere circ. xii.; jugo obtuso, haud umbonato; costis transversis, subradiantibus, fenestrantibus, interstitiis impressis: mucrone mediano, obtuso; valv. term. costis obtusis, ut in ar. diag., circ. xx.: intus valvarum mediarum lobis bifissis, terminalium circ. ix.-fissis; lobis suturalibus magnis: l'mbo pallii squamis majoribus, imbricatis, vix striatulis. Long. 34, lat. 2 poll., div. 115°.

Differs from Elenensis in the sculpture of the terminal valves.

#### 15. Nacella peltoides.

N. testa parva, lævi, cornea, subdiaphana, ancyliformi, apice elevato, valde inæquilaterali, strigis pallide castaneis radiata; intus niti-dissima, subaurantia. Long. '14, lat. '11, alt. '05 poll.

= Nacella, sp. ind., Maz. Cat. no. 262, p. 202.

#### 16. Acmæa (? var.) atrata.

d. testa solida, rugosa, conica, apice paulum antrorsum sito; extus costis crebris rotundatis irregularibus, hic et illic majoribus sculpta, haud apicem versus discordanter corrugatis; interstitiis

minimis; intus alba, castaneo et nigro varie maculata; margine latiore, nigro tessellato. Long. 1.3, lat. 1.0, alt. .5 poll. Variat margine nigro-punctato, punctis plerumque bifidis. Variat quoque costis parvis, creberrimis; margine nigro.

Intermediate between "P. discors," Phil., and "P floccata," Reeve.

#### 17: Acmæa strigatella.

A. testa A. mesoleucæ simili, sed minore, haud viridi; striolis minimis, confertissimis, plerumque erosis tenuissime sculpta; albida, strigis olivaceo-fuscis, plerumque radiantibus, interdum confluentibus picta; apice sæpius nigro; intus albida, margine satis lato, strigis tessellato. Long. '9, lat. '74, alt. '3 poll.

Variat colore hic et illic aurantiaco tincto: strigis omnino tessellatis.

According to Darwin, this might be regarded as a cross between the northern forms A. pelta and A. patina, about to change into the Gulf species, A. mesoleuca. The dark variety resembles A. cantharus, but the very delicate crowded striæ well distinguish it when not abraded.

# 18. Glyphis saturnalis.

G. testa G. inæquali simili, sed minore, latiore, altiore, tenuissime cancellata; striis radiantibus plus minusve propinquis, plus minusve nodulosis; fissura prope trientem longitudinis sita, minima, lineari, medio lobata; intus callositate albida, truncata. Long. 38, lat. 24, alt. 18 poll.

The minute hole resembles the telescopic appearance of Saturn when the rings are reduced to a line.

#### Subgenus Eucosmia*.

Testa solida, nitida, variegata, haud nacrea: apertura et anfractus rotundati: conspicue umbilicata: peritrema vix continuum, haud callosum.

The shells here grouped are like small, round-mouthed, perforated *Phasianellæ*. The animal and operculum of the Cape St. Lucas species are unknown. The *Phasianella striulata*, Max. Cat. no. 283 b (= Turbo phasianella, C. B. Ad. Pan. Sh. no. 282), and even the Lunatia tenuilirata, Maz. Cat. no. 572, are perhaps congeneric.

#### 19. Eucosmia variegata.

E. testa parva, lævi, turbinoidea, nitente, marginibus spiræ valde excurvatis; rosaceo et rufo-fusco varie maculata; anfr. nucleosis regularibus, vertice mamillato; normalibus iv., valde tumentibus, rapide augentibus, suturis impressis; anfr. ultimo antice producto; pasi rotundata; umbilico carinato; apertura vix a pariete inden-

^{*} Th. εὖ, well; κοσμία, adorned.

tata: peritremate pene continuo, acuto. Long. 1, long. spir. 05, lat. 07 poll., div. 70°.

Variat interdum rugulis incrementi ornata.

#### 20. Eucosmia (? variegata, var.) substriata.

B. testa E. variegatæ simillima, sed anfr. circa basin et supra spiram (nisi in anfr. nucl. lævibus), interdum tota superficie tenuiter et crebre striatis; striis anfr. penult. circ. x.

# 21. Eucosmia punctata.

E. testa E. variegatæ simili, sed multo majore, multo magis elongata, angustiore, Phasianelloidea; plerumque fusco creberrime punctata; umbilico parvo. Long. 22, long. spir. 11, lat. 15 poll., div. 50°.

# 22. Eucosmia cyclostoma.

E. testa parva, valde obtusa, lata, regulari, valvatoidea; marginibus spiræ vix excurvatis; pallide cinerea, fusco-olivaceo dense punctata seu maculata; anfr. nucleosis pallidis, mamillatis; normalibus iii., valde tumentibus, suturis valde impressis; apertura vix a pariete indentata; umbilico magno, subspirali. Long. 05, long. spir. 025, lat. 05 poll., div. 90°.

Curiously like a small depressed Valvata obtusa, but with the texture of Phasianella.

#### Genus Haplocochlias*.

Testa Colloniam simulans, sed haud margaritacea: apertura circularis, varicosa: columella haud callosa.

The animal and operculum are unknown. Its affinities may be with *Ethalia*.

#### 23. Haplocochlias cyclophoreus.

H. testa compacta, parva, solidiore; albida, seu pallide aurantiaca; anfr. v., rapide augentibus, suturis impressis; tota superficie minutissime spiraliter striolata, nitida; apertura rotundata; peritremate continuo, incrassato, extus varicoso; labio distincto; axi t. jun. umbilicata, adultæ lacunata. Long. 19, long. spir. 06, lat. 2 poll., div. 100°.

When laid on its base, this shell resembles Helicina; but the mouth is more like Cyclophorus. The young shell is semi-transparent, and resembles a Vitrinella with thickened lip.

# 24. Narica aperta.

N. testa parva, inflata, tenui, alba; anfr. nucl.?...; norm. rapide augentibus, lirulis crebris spiralibus, in spira hic et illic majoribus, a striolis creberrimis radiantibus minutissime decussatis; suturis valde impressis; apertura subcirculari; umbilico maximo,

* Th. dπλοῦς, unadorned; κοχλίας, snail.

carinato, anfractus intus monstrante. Long. 28, long. spir. 08, lat. 3 poll., div. 110°.

# 25. Fossarus parcipictus.

F. testa parva, solidiore, spira plus minusve elevata; albida, rufofusco varie maculata; carinulis spiralibus acutioribus, quarum
circ. vi. majores, striolisque crebris cincta; anfr. ultimo tumidiore;
labro acuto, haud intus incrassato; umbilico satis magno, ad marginem carinato: operculo normali. Long. 24, long. spir. 06,
iat. 2 poll., div. 90°.

The few specimens found are very variable in outline.

#### 26. Fossarus purus.

F. testa F. angulato simili, sed alba, subdiaphana; anfr. nucl. ii., fuscis, ut in F. tuberoso cancellatis; norm. ii. et dimidio, altis, valde tumentibus, carinatis; carinis iv., validissimis, acutissimis, quarum ii. in spira monstrantur; carinulis aliis antice et postice plus minusve expressis; tota superficie minute spiraliter striata; carinularum basalium interstitiis subobsolete decussatis; apertura late semilunata; labro a carinis valde indentato; labio recto, angusto; umbilico magno, carinato; operculo fusco, valde paucispirali, minutissime ruguloso, nucleo antico. Long. '08, long. spir. '03, lat. '08 poll., div. 90°.

#### 27. Litorina pullata.

L. testa parva, solidiore, luctuosa; spira satis exserta; nigrescente, seu livido-fusco tincta, lineis spiralibus exilissimis pallidioribus ornata; interdum obscure tessellata; anfr. v., subplanatis, suturis parum impressis; sublevi, striolis spiralibus tenuiter insculpta; columella intus incrassata; pariete haud excavato. Long. 4, long. spir. 18, lat. 29 poll., div. 60°.

= Litorina, sp. ind., Maz. Cat. no. 399, p. 350.

#### 28. Litorina (Philippii, var.) penicillata.

L. Ph. testa parva, lineis radiantibus, variantibus, delicatulis, rarius ziczacformibus, et cingulis duobus spiralibus, quorum unum in spira monstratur, elegantissime penicillata. Long. 33, long. spir. 14, lat. 2 poll., div. 50°.

Closely resembling the West-Indian L. ziczac, var. lineata, D'Orb. Intermediate specimens, however, clearly connect it with the common Mazatlan form.

#### 29. Rissoa albolirata.

R. testa parva, alba, crystallina, normali; marginibus spiræ undatis; anfr. nucl. iii., lævibus, mamillatis; norm. iv., medio subconvexis, postice supra suturas planatis; basi subplanata, effusa, haud umbilicata; lirulis spiralibus crebris, obtusis, quarum circ. x. in spira monstrantur; apertura subovata, peritremate continuo; labro

arcuato, vix antice et postice sinuato, calloso; labio valido. Long. 1, long. spir. 08, lat. 04 poll., div. 25°.

# 80. Fenella crystallina.

F. testa alba, subdiaphana, turrita, rudiore; marginibus spiræ rectis, parum divergentibus; anfr. nucl.?... (decollatis); norm. v., valde rotundatis, suturis impressis; costis radiantibus circ. xvi.. valde rotundatis, haud extantibus, interstitiis latis; striis spiralibus regularibus, in anfr. penult. xvi.; apertura rotundata; basi rotundata; peritremate continuo; labro extus varicoso; labio calloso. Long. 14, long. spir. 11, lat. 05 poll., div. 20°.

# 31. ! Hydrobia compacta.

1H. testa lævi, curta, compacta, latiore; marginibus spiræ vix excurvatis; anfr. nucl. normalibus, apice mamillato; norm. iv., tumidis, suturis distinctis; spira curtiore; basi rotundata; apertura subovata; peritremate continuo; labio definito. Long. '04, long. spir. '02, lat. '03 poll., div. 70°.

This unique shell may be a Barleeia.

#### 32. Hyala rotundata.

II. testa (quoad genus) magna, tenui, alba, diaphana; anfr. nucl. normalibus, apice mamillato; norm. iv., globosis, rapide augentibus, suturis valde impressis; basi rotundata; apertura subrotundata, ad suturam subangulata; peritremate continuo; labio a pariete separato, rimulam umbilicalem formante; columella valde arcuata. Long. '18, long. spir. '09, lat. '1 poll., div. 40°.

A unique shell, resembling a marine Bithinia.

# 83. ?Diala electrina.

1D. testa subdiaphana, rufo-cornea, nitida; marginibus spiræ parum excurvatis; vertice nucleoso, helicoideo; anfr. iii., tumidis, suturis haud impressis, apice magno mamillato; anfr. norm. iii., subplanatis, suturis distinctis; sculptura haud expressa; tota superficie costulis obscuris, latis, spiralibus, quarum vi.—viii. in spira monstrantur, et iii.—v. circa basim rotundatam, interdum obsoletis, cincta; costulis radiantibus circ. xviii., subobsoletis; apertura regulariter ovata, ad suturam angulata, peritremate continuo; basi haud umbilicata; columella regulariter arcuata. Long. '09, long. spir. '07, lat. '03 poll., div. 30°.

# 34. Acirsa Menesthoides.

4. testa nitida, turrita, majore, solidiore, pallide fusca; anfr. nucl. lævibus; norm. vi., subplanatis, suturis distinctis; lineis crebris spiralibus insculpta, quarum circ. viii. in spira monstrantur; testa adolescente lirulis radiantibus obsoletis decussata; apertura subovali; columella solida, imperforata. Long. 42, long. spir. 3, lat. 16 poll., div. 25°.

# 85. Cythnia asteriaphila.

C. testa C. tumenti simillima, sed umbilico minore, haud carinato, tenuissima, diaphana; anfr. iv., tumidis; vert. nucl. normali, haud stylineo, apice mamillato: operculo tenuissimo, elementis concentricis, nucleo submediano sinistrorsum sito. Long. '03, long. spir. '015, lat. '025 poll., div. 60°.

A solitary specimen was found by Dr. Stimpson, imbedded in a star-fish, like Stylina; from which genus the vertex and oper-culum distinguish it.

#### 36. Bittium nitens.

B. testa regulari, rufo-fusca, hic et illic pallida, maxime nitente; anfr. nucl. iii., levibus, tumidis, apice submamillato, subdeclivi; norm. vi., tumidis, suturis impressis; costis radiantibus circ. xiv., haud contiguis, angustis, interstitiis undatis; costulis rotundatis, spiralibus, in spira iv., quarum postica multo minor, supercurrentibus, ad intersectiones subnodosis; costulis circa basim subrotundatam iv., haud decussatis; apertura subquadrata; columella haud truncata, obtuse angulata; labro acuto, a costulis indentato; labio inconspicuo. Long. 21, long. spir. 16, lat. 06 poll., div. 20°.

# 37. Manyelia subdiaphana.

M. testa parva, subdiaphana, albida, interdum rufo-fusco pallide tincta; satis turrita, marginibus spiræ parum excurvatis; anfr. nucleosis iii., lævibus, diaphanis, apice mamillato; norm. iv., satis excurvatis, haud angulatis, suturis impressis; fascia super spiram pallide fusca, alteraque candida contigua; costulis radiantibus xiv.-xviii., acutis, subrectis, distantibus, interstitiis undatis; tota superficie minute et creberrime spiraliter striata; basi producta, striis magis expressis; apertura subelongata; labro ad dorsum incrassato, postice distincte emarginato, intus haud dentato; labio tenuissimo; columella recta, antice late canaliculata. Long. 19, long. spir. 1, lat. 06 poll., div. 30°.

#### 88. Drillia appressa.

D. testa parva, compacta; rufo-fusca, interdum supra costas pallidiore; marginibus spiræ excurvatis; anfr. norm. vi., planatis, suturis indistinctis; costis tuberculosis radiantibus circ. xiv., antice et postice obsoletis; striolis spiralibus creberrimis; costa spirali irregulari postica, tuberculosa, super suturas appressa; area sinus parvi vix definita; basi satis prolongata; apertura subquadrata; labio distincto. Long. 3, long. spir. 17, lat. 12 poll., div. 40°.

# 39. Cithara fusconotata.

C. testa parva, satis turrita, tenui, albida; postice linea, seu serie macularum, rufo-fusca, interdum altera peripheriali ornata; marginibus spiræ rectioribus; anfr. nucl. ii., rotundatis, apice mamillato; norm. vi., in spira rotundatis, suturis impressis; basi satis rotundata; costis radiantibus circ. ix., acutis, distantibus, antice

et postice subobsoletis; tota superficie spiraliter sulcata, surulis subdistantibus, undatis, costas superantibus; apertura subovali, satis elongata, postice valde sinuata; labro acuto, dorsaliter costulato, intus haud dentato; labio tenui. Long. 36, long. spir. 18, lat. 16 poll., div. 40°.

# 40. Obeliscus variegatus.

O. testa O. hastato simili; nitidissima, striolis incrementi exilissimis; livido et castaneo varie nebulosa; prope suturam canaliculatam lineis albidis picta; hic et illic callositate alba interna; peripheria circa basin insculpta, unicolore; columella truncata, triplicata; plica superiore acuta, exstante, circa basim continua; plicis anticis parvis, spiralibus. Long. '44, long. spir. '3, lat. '15 poll., div. 23°.

# 41. Odostomia (Evalea) æquisculpta.

O. testa parva, ovoidea, alba, subdiaphana; marginibus spiræ subrectis; vert. nucl.?..., normaliter truncato; anfr. norm. iv., parum arcuatis, suturis impressis; tota superficie costulis spiralibus circ. xiv., quarum vi. in spira monstrantur, latis, planatis, æquidistantibus; interstitiis parvis; basi rotundata; apertura ovata; peritremate haud continuo; labro acuto; labio subobsoleto; plica juxta parietem conspicua, acuta, transversa; columella arcuata, rimulam umbilicalem formante. Long. 07, long. spir. 04, lat, *03 poll., div. 40°.

#### 42. Odostomia (Evalea) delicatula.

O. testa tenuissima, alba, diaphana, nitente, elongata; marginibus spiræ eleganter excurvatis; vert. nucl. lævi, globoso, decliviter immerso; anfr. norm. iii., subplanatis, suturis impressis; liris subacutis, spiralibus, quarum v. in spira monstrantur; interstitiis latis, undatis, creberrime decussatis; basi elongata; apertura oblonga, peritremate haud continuo; labro tenui; labio vix conspicuo; plica juxta parietem exstante, declivi. Long. '075, long. spir. '04, lat. '03 poll., div. 30°.

#### 43. Chrysallida angusta.

C. testa parva, satis elongata, nitida, alba, sculptura minus expressa; marginibus spirse parum excurvatis; vert. nucl. parvo, subito immerso, dimidium truncationis tegente; anfr. norm. v., planatis, elongatis, suturis minus impressis; costis radiantibus circ. xiii., plerumque lineis continuis marginibus utrinque parallelis, circa basim productam obsoletis; lirulis spiralibus angustis, in spira circ. v., interstitiis decussantibus, supra costas haud nodulosis; apertura ovali; peritremate parum continuo; labro tenui, translucido; labio tenui; plica juxta parietem parva, obtusa. Long. *095, long. spir. *065, lat. *028 poll., div. *20°.

#### 44. Eulima fuscostrigata.

E. testa minore, gracillima, albida, striga latiore rufo-fusca supra

peripheriam ornata; basi quoque rufo-fusca, valde prolongata, regulariter excurvata; anfr. nucl. ii., tumidioribus; norm. viii., planatis, suturis haud conspicuis; varicibus nullis; apertura valde elongata; labro vix sinuato; labio vix calloso. Long. 17, long. spir. 12, lat. 05 poll., div. 20°.

# 45. Opalia crenatoides.

Additional specimens may connect this with the Portuguese O. crenata.

#### 46. Truncaria eurytoides.

T. testa parva, turrita, gracili; albida, sæpius fascia circa peripheriam maculis fusco-aurantiacis picta; anfr. nucl. mamillatis, lævibus; norm. v., effusis, subplanatis, ultimo paulum constricto; costulis radiantibus circ. xx., aperturam versus evanidis; apertura subquadrata; labro haud incrassato, interdum intus subtiliter striato, haud dentato; labio appresso; columella abrupte truncata. Long. 3, long. spir. 2, lat. 11 poll., div. 23°.

Variat basi fusco tincta, seu tota superficie ut in Nitidella cribraria picta.

#### 47. Sistrum (? ochrostoma, var.) rufonotatum.

S. testa S. ochrostomati simili, sed minore, angustiore, vix tabulata; alba, linea punctorum rufo-fuscorum subperipheriali, interdum lineis spiralibus, interdum ejusdem coloris maculis, ornata; vert. nucl. mamillato, anfr. iii., lævibus, vix tumidis; norm. v., plus minusve elongatis, in medio nodoso-angulatis, postice planatis, suturis ad angulum valde obtusum conspicuis; seriebus nodulorum spiralibus iii., quarum postica major, secundum costas radiantes obsoletas circ. vi.-viii. ordinatis; seriebus anticis inconspicuis ii.; interdum costulis spiralibus intercalatis; canali brevi, rectiore, aperto, angusto; apertura subovali, vix subquadrata, intus pallide aurantiaca; labro acutiore, dorsaliter subvaricoso, postice sæpe sinuato, intus obscure vi.-dentato; labio conspicuo, interdum exstante. Long. 5, long. spir. 23, lat. 32 poll., div. 60°.

Variat testa obesa, nodulis validis. Variat quoque testa acuminata, nodulis subobsoletis. Long. 52, long. spir. 23, lat. 25 poll., div. 42°.

#### 48. ? Nitidella millepunctata.

?N. testa parva, nitida, livida; spira exstante, anfractibus subplanatis, suturis distinctis; anfr. nucl. lævibus, adolescentibus obso-

lete radiatim lirulatis, adultis sevibus; zona alba postica, suturam attingente, aurantiaco maculata; tota preter zonam superficie aurantiaco puncticulata, punctis minimis, creberrimis, in quincunces dispositis; apertura subquadrata; labro incrassato, intus vi.-dentato; labio exstante, a lirulis circa basim spiralibus indentato. Long. 3, long. spir. 17, lat. 15 poll., div. 40°.

Differs from Columbella albuginosa, Rve., in its peculiar and constant painting.

49. ? Nitidella densilineata.

?N. testa ?N. millepunctatam forma et indole simulante, sed omnino nitida, anfractibus planatis, suturis indistinctis, striolis circa basim minimis; livida, lineolis aurantiaco-fuscis divaricatis, seepe ziczac-formibus, densissime signata. Long. '25, long. spir. '15, lat. '1 poll., div. 35°.

The opercula of these two species being unknown, their generic position remains doubtful. The same is true of the two following.

#### 50. ? Anachis tincta.

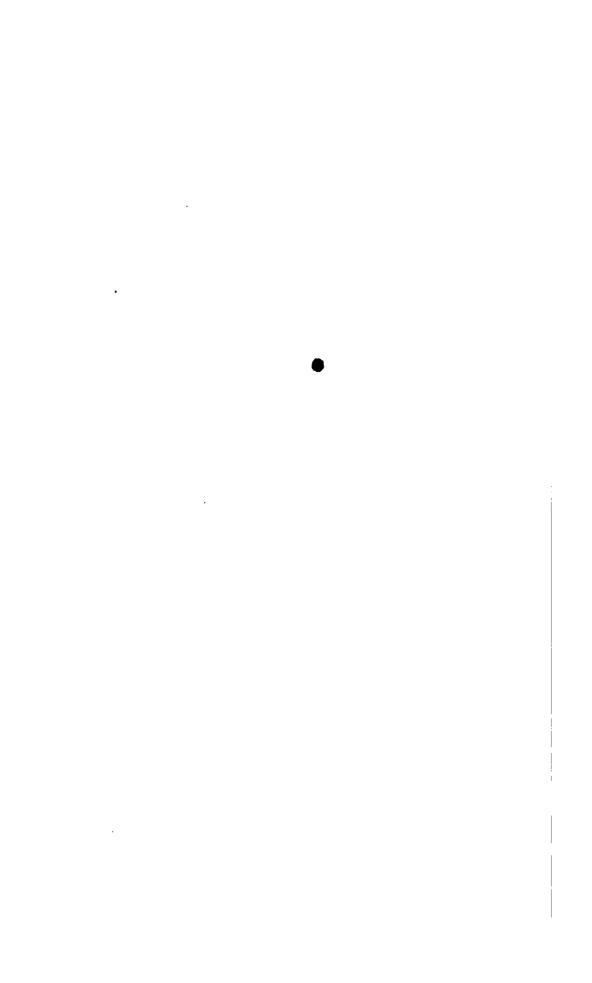
?A. testa parva, turrita, albida, rufo-aurantiaco supra costas tincta; anfr. nucl. lævibus; norm. iv.—v., subplanatis, suturis valde impressis; costulis x. radiantibus, et liris spiralibus transeuntibus, in spira iii. supra costas conspicuis, unaque in sutura, dense insculpta; interstitiis alte cælatis; apertura subquadrata; labro in medio incrassato. Long. 19, long. spir. 12, lat. 08 poll., div. 30°.

#### 51. ? Anachis fuscostrigata.

7.1. testa parva, turrita, livida, nitida; zonis rufo-fuscis, subspiralibus, in spira circ. iii., interdum, m uxime ad basim, confluentibus, conspicue cincta; lirulis radiantibus subobsoletis, circ. x., prope suturam se monstrantibus; apertura subquadrata. Long. 13, long. spir. 095, lat. 045 poll., div. 20°.

#### 52. Pisania elata.

P. testa minore, valde turrita, Latiroidea; alba, rufo-fusco antice et postice varie maculata seu strigata; anfr. nucl. ?...; norm. vi., convexis, suturis impressis; costis radiantibus vi.—viii., obtusis, interstitiis undatis; lirulis spiralibus distantibus, in spira plerumque iii., aliis minoribus intercalantibus; canali angusto, sub-recurvato; apertura subovata; pariete postice dentata; columells parum contorta. Long. 68, long. spir. 37, lat. 29 poll., div. 38°.



# CONTRIBUTIONS

TOWARDS A

# MONOGRAPH OF THE PANDORIDÆ.

BY

PHILIP P. CARPENTER, B. A., PH. D.

From the Proceedings of the Zoölogical Society of London, pp. 596-603, November 22, 1864.

(223)

•						ı
	,					
			•			
			•			
		,	4			•
				•		
						i

# CONTRIBUTIONS TUWARDS A MONOGRAPH OF THE PANDORIDE. By PHILIP P. CARPENTER, B.A., Ph.D.

It is remarkable that, notwithstanding the zeal with which most of the old genera have been divided, to meet the wants of modern malacology, the genus Pandora, Lam., has been left untouched by Dr. Gray, Messrs. Adams, and their follower, Chenu. Yet the species known to the elder Sowerby present three distinct types of hinge, which were well figured by him in his 'Conchological Illustrations.' Specimens and even species of Pandora (except of the well-known N. Atlantic forms) being very rarely seen in collections, it is presumed that naturalists have had but few opportunities of studying Mr. Cuming having most kindly allowed me to examine the hinge of all the species in his collection, it has appeared desirable to propose two new genera, and also to group part of the typical species under a subgenus.

It was at one time thought that the presence of an ossicle in the cartilage was a family mark of saatinide, to which Myadora from Pandoridæ, and Tellimya from Kelliadæ, were consequently removed. One of the new genera of Pandorids, however, possesses a well-developed ossicle; and a small one is seen even in some species of the

normal genus.

The most highly organized structure in the family is found in the North American genus Clidiophora, which has both clavicle* and ossicle; the next is the East-Indian group Calodon, which wants both clavicle and ossicle, but possesses a tent-shaped dentition in the The simplest form is the well-known Pandora, which has neither clavicle, tent, nor ossicle; but in the subgenus Kennerlia the ossicle is present. The genus Myodora is quite distinct, but connected with Pandora through Kennerlia.

#### Genus CLIDIOPHORAT.

Testa Pandoriformis, ventraliter expansa; valva dextra tridentata, dente postico elongato; valva sinistra sæpius bidentata, dente antico simplici; cartilogine ossiculo firmata; sinu pallii nullo.

- 1. Type, CLIDIOPHORA CLAVICULATA, Cpr. (Pandora cl.) P.Z.S. 1855, p. 228.
- * The word "clavicle" is used (in default of a better) to denote a linear dental process running into the body of the shell, often serving as a support to the cardual plate, as in Anatina and some species of Placunomia.

† Th. κλειδίον, a clavicle; φέρω.

In the dentition of the right valve this genus resembles Cœlodon, except that the posterior lamina is greatly developed, resembling a clavicle. The left valve wants the central tooth and chamber of that genus. This structural deficiency, however, is compensated by the development of an ossicle in the long cartilage. As far as is known, all the species are from North and Central America, and are swollen ventrally.

#### 2. CLIDIOPHORA CRISTATA.

C. t. securiformi, minus transversa, tenui, subplanata; umbonibus ad \$\frac{2}{2} longitudinis sitis; ventraliter maxime excurvata; marginibus dorsalibus, post. maxime incurvato, ant. hic et illic alulis triangularibus cristato: intus marginibus pos'icis utraque in valva erectis: v. dextr. dente postico satis longo, cicatrice adductoris tenus haud porrecto; dente centrali extante; dente antico a margine separato, usque ad cic. anticam porrecto, haud extante: v. sinistr. dente post. bifido, haud extante, alterum recipiente, fossa cartilaginea contigua; d. centr. nullo; d. ant. satis extante, usque ad cicatr. anticam porrecto; linea palliari a margine valde remota, regulariter in puncta divisa; radiis ab umbonibus usque ad puncta conspicuis, æqualibus; ossiculo tenui, elongato.

Long. 1.0, lat. 6, alt. 1 poll.

Hab. in sinu Californiensi; legit Conway Shipley diligentissimus;

sp. un. in Museo Cumingiano.

This species is known from *C. claviculata* by the much greater posterior curvature of the beaks, and anteriorly by the beautiful triangular wing-like serrations of the margin, in which it resembles *Tellidora burneti*. The inside has elegant rays from the umbo to the dotted pallial line.

#### 3. CLIDIOPHORA TABACEA, Meusch. (Mus. Gron.).

Specimens under this specific name are preserved in the Cumingian collection.

- 3 a. CLIDIOPHORA TRILINEATA, Say (Pandora tr.), Hanl. Rec. Shells, p. 49.
- 3 b. CLIDIOPHORA NASUTA, Sby. (Pandora n.), Sp. Conch. f. 18, 19.

It is probable that these are simply varietal forms of the well-known New England species. Say's name and Sowerby's excellent figure prove that the peculiar hinge of the genus was observed by both authors. Mr. Cuming gives "Philippines" as the habitat of his specimens of C. nasuta, probably in error. Mr. Hanley quotes it as a synonym of C. trilineata. An examination of a large series from Staten Island proves that the outline varies considerably. The tablet in the Nuttallian collection at the British Museum, marked Pandora punctata, belongs to this species. Young shells, when quite perfect,

display faint radiating grooves on the prismatic layer of the flat valve, as in Kennerlia.

#### 4. CLIDIOPHORA PUNCTATA, Conr.

This very rare species was only known in England by worn left valves in the British Museum, and in Mr. Cuming's and Mr. Hanley's collections. The first perfect specimens were dredged by Dr. J. G. Cooper (Zoologist to the Californian State Survey) at San Pedro. A young shell, sent by him to the Smithsonian Institution, displays a dentition agreeing in the main with C. trilineata. In the flat valve, the central and anterior teeth are close together and nearly parallel; the anterior short, nearly obsolete; the middle long and sharp, corresponding with the long, sharp tooth in the convex valve, which points to the outside of the anterior scar, instead of to the middle, as in C. trilineata. The (posterior) clavicle-tooth in the flat valve is longer than in the Eastern species, with the cartilage on it for two-fifths of the length. In C. trilineata it lies by the side, nearly the whole way. The posterior margin of the convex valve fits between the clavicle and the margin of the flat valve. The ossicle is remark-ably long and thin. The punctures are extremely conspicuous even in this young, transparent, and papyraceous specimen; and, what is more peculiar, the dried remains of the animal are covered with minute pearl-shaped grains of shelly matter corresponding with them.

4 a. CLIDIOPHORA DEPRESSA, Sby., = Pandora d., Sp. Conch. f. 11, 12; Hanl. Rec. Shells, p. 49.

The "posterior" dilated side of Sower'sy is the "anterior" of Hanley. The species was constituted from a "very few specimens, all of them much worn down, as if they had been used as ornaments." The hinge therefore may not have been accurately observed. They were part of the Humphrey collection, and perhaps from the Californian region. Judging from the shape (for no type has been discovered), it may be identical with C. punctata, Conr.

# 5. CLIDIOPHORA ACUTEDENTATA (vice C. B. Ad.).

C. t. parum "elongata, ovata; parte postica" haud rostrata, latiore, obtusa; "margine dorsali" postico "subrecto; margine ventrali rotundato," haud tumente; parte antica curtiore; "umbonibus subæqualiter subconvexis, umbone dextro postice angulato": intus, v. convexa dente antico magno, acutissimo, medio parvo, postico valido, maxime elongato; v. planata dentibus antico et postico acutis; ligamento juxta dentem posticum sito.

"Long. .7, lat. .42, alt. .11 poll."

Hab. in Panama: sp. unicum, postice fractum, legit C. B. Adams deploratus: Museo Coll. Amherstianæ:=Pandora cornuta (Gld.), C. B. Ad. Pan. Shells, no. 498, P.Z.S. 1863, p. 368.

Prof. Adams's "appropriate name suggested by Dr. Gould" being calculated to mislead, I have thought it necessary to change it.

Most of the original diagnosis must also be dropped, the parts above quoted being all that it is desirable to retain. The present description is written from notes and drawings made on a careful examination of the broken type. The lines of growth show that, so far from being "cornute," the species is remarkable for the absence of beak,—the margins being more equally rounded even than in P. obtusa, which in shape it somewhat resembles. The hinge is almost exactly like that of C. claviculata, jun., but differs in the somewhat greater proportionate length of the clavicle, and in the unwonted size and sharp pointing of the anterior tooth. The new name has been chosen to record this peculiarity, rather than follow the modern custom of naming from the author of the mistake. The best naturalists occasionally err; but corrections can be made without affixing a false compliment in perpetuity.

6. ? CLIDIOPHORA DISCORS, Sby. (Pandora d.), P. Z. S. 1835, p. 99; Sp. Conch. f. 29, 30.

The typs has not been discovered; the figure and diagnosis only relate to the outside; and the habitat is not stated. The genus is therefore doubtful; but in shape it resembles the young of C. clariculata.

7. CLIDIOPHORA ARCUATA, Sby. (Pandora a.), Sp. Conch. f. 27, 28; P. Z. S. 1835, p. 93; Hanl. Rec. Shells, p. 49.

The worn valves in the Cumingian collection do not allow of a confident determination of the genus.

#### Genus CŒLODON .

Testa Pandoriformis: valva sinistra dentibus duobus, cicatricem adductoris anticam versus radiantibus, lamina infra cavernoss junctis: ossiculo nullo: sinu pallii nullo.

The shells of this group vary considerably in shape and dentition in the different species; but agree in this, that in the left valve there is a kind of tent, formed by a thin laminated roof lying on the top of two diverging teeth. It is hard even to guess what is the use of this (perhaps unique) structure; especially as its opening is not towards the body of the shell, but directly facing the anterior adductor. It is seen at once on opening the typical species, which was well figured by Sowerby, Sp. Conch. f. 22. In the aberrant forms it might easily be overlooked, and a glass is needed to detect it in small specimens; but if it exists, the shell can be supported on a pin thrust into the "hollow tooth." When more species are known, the group may require subdivision, the C. flexuosus especially presenting a marked transition to Clidiophora. In that genus the posterior part excels in development; in Calodon, the anterior. All the known species are from the Eastern seas, but are very seldom seen in collections. An enlarged diagnosis of the type species is offered.

#### 1. CŒLODON CEYLANICUS.

Pandora ceylunica, Sby. P. Z. S. 1835, p. 94; Sp. Conch. f. 20, 21, 22, = P. ceylonica, Haul. Rec. Shells, p. 50, = P. indica, Chenu, Man. Conch. ii. p. 54. f. 214.

C. t. planata, rostrata, securiformi; ventraliter maxime, antice satis excurvata; margine postico dorsali valde incurvato: intus, valva dextra, margine postico rectangulatim euperstante, dentibus anticis ii. prælongis, satis extantibus, usque ud cicatricem adductoris continuis, dentem cavernosum valvæ alterius amplectantibus; dente postico curtiore, extante, fossam cartilagineam per totam longitudinem gerente: valva sinistra, margine postico subrectangulatim superstante; sulco postico dentem v. alt. recipiente; dentibus anticis usque ad cicatricem adductoris continuis, centrali longiore, plus quam dimidio interstitii lamina tenui tecto, ventraliter arcuato.

Under this species, of which the correct locality appears in the name, Mr. Sowerby quotes "a single specimen obtained at Island Muerte, W. Columbia, 11 fm., by Mr. Cuming." The hinge may not have been examined. The shell quoted does not now appear in the Cumingian collection, and probably belonged to Clidiophora claviculata, which in shape resembles the typical Coolodon.

la. Cœlodon cumingii, Hanl. (Pandora c.), P. Z. S. 1861, p. 272.

This agrees with the last species in shape and dentition, and is probably only a variety.

Hab. Philippines (Cuming).

- 2. Cœlodon delicatulus, A. Ad. (Pandora d.) P. Z. S. (diagn. suct.).
  - ... marginibus dorsalibus ad angulum circ. 160° divergentibus: cardine v. dextr. dente postico satis elongato; centrali curto, ad umbonem valde calloso; antico longissimo, cicatricem ant. superante, margini contiguo: v. sinistr. dente centrali curto, supra cavernam evecto, in anticum prælongum continuo.

In this species, the shape of which is not unlike *P. obtuea*, though less transverse, the anterior teeth are enormously developed at the expense of the central. These are short, but prominent; in the left valve bent over, along the whole length, to form the roof of the chamber, and then drawn on into the anterior tooth.

#### 3. COLODON ELONGATUS, n. s.

C. t. parva, tenuissima, maxime planata; parte antica minore, excurvata; ventraliter valde excurvata, postice maxime elongata, rostro angustiore; dorsaliter valde incurvata: intus, v. dextr. dente post. satis longo; d. centrali prælongo, postice flecto, cicatricem adductoris parum superante; d. antico minore: v. sinistr. cartilagine valde elongata, postice sita; d.

centrali prælongo, postice flecto; d. antico minore a margine remoto, lamina totius longitudinis ad centralem juncto.

Long. 65, lat. 3, alt. 05 poll.

Hub. in China et Borneo (Mus. Cuming.).

This species is the Eastern representative of P. rostrata, as is C. delicatulus of P. obtusa. It has the reverse dentition, the central tooth being very long, and the anterior short, bridged over to meet it at the whole length. In the Borneo shell, which is larger, the anterior tooth is rather longer, with the front margin of the ceiling more incurved; but the differences are probably due to increased age only.

- 4. Cœlodon flexuosus, Sby. (Pandora f.), Sp. Conch. f. 13, 14, 15; Hanl. Rec. Shells, p. 49 (diagn. auct.),
  - ... cardine v. dextra dente postico prælongo, a margine separato, usque ad cicatr. adduct. porrecto; fossa cartilaginea curta, inter dentes post. et centr. sita; d. centr. curtissimo, maxims extante, retrorsum deflecto; d. ant. minimo, pene obsoleto: v. sinistr. sulco prælongo postico; fossa cartilaginea separata, curtiore; d. centr. extante, curtissimo, supra cavernam pyrsformem, in dentem anticum usque ad cicatr. adduct. prolongatum, porrecto.

This long-known but rare Red Sea species is to *Pandora* what *Trusis* (Gray) is to *Arca*. It is swollen and twisted, and, by its long clavicle, forms an interesting transition to *Clidiophora*.

4 a. ? CœLODON UNGUICULUS, Sby. (Pandora w.), Sp. Conch.; f. 16, 17; Hanl. Rec. Shells, p. 49.

The type has not been found of this species, which was described from a convex valve only. It clearly belongs to the same section as C. flexuosus, and, though the shape is somewhat different, perhaps it is only a variety.

# Genus PANDORA, Lam.

It is proposed to limit this genus according to the diagnosis of Sowerby, founded on Lamarck's. Succeeding naturalists have adopted the diagnosis, while they have included in it species to which it did not apply. It presents a very simple type of hinge, as though the Pandorid idea were gradually fading away towards Myodora. The P. wardiana is the finest species in the group; but it is scarcely typical, having the radiating grooves of the section Kennerlia. The Lamarckian type is the Tellina inequalis of Linnæus.

- 1. PANDORA ROSTRATA, Lam., Forbes & Hanl. et auct. plur. = P. inæqualis, Linn., Gray, Add.
- * Chenn, however (Man. Conch. ii. p. 51), gives an original and extended diagnosis, in which he accredits to the whole genus "une dent triangulaire, aplatie, bifurquée, dont la portion antérieure, plus longue, se prolonge jusqu'à l'impression musculaire antérieure"—a character which only belongs to the section Caludon.

- 2. PANDORA OBTUSA, Lam., auct.
- 3. PANDORA BREVIFRONS, Sby., Sp. Conch. f. 25, 26; P. Z. S. 1835, p. 93.
  - 4. PANDORA CISTULA, Gld. Otia, p. 77.

This species is not quoted in the index to the E. E. Moll., but appears in the text (p. 396) and in the Atlas (f. 500). In shape, but not in texture, it resembles P. oblonga.

5. Pandora oblonga, Sby., Sp. Conch. f. 10; Hanl. Rec. Shells, p. 49.

The unique type of this species, from Humphrey's collection, has not been found; it was not described in the P. Z. S., and very closely resembles P. rostrata.

- 6. PANDORA RADIATA, Sby., P. Z. S. 1835, p. 24; Sp. Conch. f. 23, 24.
  - 7. PANDORA WARDIANA, A. Ad. P. Z. S. 1859, p. 487.

No ossicle has been observed in any of the above species. If it be found hereafter in living specimens of the grooved *P. radiata* and *P. wardiana*, they should be removed to the subgenus. The group is not local, as appears to be the case with *Cælodon* and *Clidiophora*, being found in both hemispheres and on both sides of the equator.

#### Subgenus KENNERLIA.

Pandora cartilagine ossiculo tenuiore instructa; lamina exteriore prismatica valva planata radiis plerumque insculpta.

The typical species have radiating grooves in the exterior prismatic layer of the right valve. These have not been observed in K. glacialis, but perhaps the specimens are somewhat decorticated. The essential character is the possession of an ossicle. This is well developed in K. glacialis, but so thin in the other species that it is often hidden in dried shells by the contraction of the cartilage. The first species in which it was observed (Dr. Kennerley having sent several fresh specimens, preserved in alcohol, to the Smithsonian Institution) was

# 1. Kennerlia filosa, n. s.

K. t. tenui, planoconvexa, maxime rostrata; marginibus dorsalibus rectis, ad angulum circ. 160°; ventrali regulariter et modice excurvato, postice vix sinuato; epidermide olivacea, plerumque erosa, postice corrugata; lamina externa prismatica spongiosa; valva planata radiatim sulcata (quasi filosa), sulcis distantibus; valva convexa, costa obtusissima postice decurrente;

231

^{*} Named in grateful remembrance of the services rendered to science by the late Dr. Kenneriey, the naturalist to the American N. Pacific Boundary Survey; whose premature death has interrupted, almost at the onset, our Luowledge of the dredging-fauna of Puget Sound

lineis seu undis increments conspicuis: intus dente cardinali uno, parvo, extante; callositate claviculoidea antica, margini contigua; fossa cartilaginea postice sita; cicatricibus adductorum rotundatis, margini dorsali contiguis; linea pallii simplici.

Long. ·8, lat. ·4, alt. ·12 poll. Hab. in sinu Pugetiano (Kennerley).

#### 2. Kennerlia bicarinata, n. s.

K. t. "K. filosæ" simili, sed haud rostrata; postice latiore; carinis in valva convexa duabus, in valva planata una, ex umbonibus postice decurrentibus; lamina prismatica radiatim sulcata, haud spongiosa; valva convexa tenuiter indentata; ligamento elongato, tenuissimo.

Long. .5, lat. .25, alt. .06 poll.

Hab. in insula Catalina, Californise; 40-60 uln., rara (Dr. J. G. Cooper. State Geological Survey Coll. no. 1063; Mus. Smithsonian Inst.).

The shape and keels at once distinguish this beautiful little species from its Northern ally, with which, in the hinge and threading of the outer layer, it exactly agrees. The ligament in both species is extremely thin, holding the valves together from the umbo to the posterior end. The fossil *Pandora bilirata*, Conr., may prove identical with this recent species; but the diagnosis, figure, and type specimen are so imperfect that it would be too hazardous to affiliate them.

3. KENNERLIA GLACIALIS, Leach (Pandora gl.), Sby. Sp. Conch. f. 4, 5, 6; Hanl. Rec. Shells, p. 49 (diagn. auct.).

... valva dextra callo conspicuo fossam cartilagineam firmante; ossiculo fortiore.

The known species of Kennerlia are thus confined to the North Pacific and the Arctic seas. The diagnosis of No. 1 belongs to a paper on Dr. Kennerley's new species in the Journ. Ac. N. S. Philad.; and that of No. 2 to a series of papers on Dr. Cooper's new species in the Proc. Calif. Ac. N. S. They are inserted here to complete the monograph, as far as known to the writer. The "Pandora striata, Quoy" (Add. Gen. ii. p. 371), is a Myodora. The latter genus is so well defined that no alteration is proposed in it.

# DIAGNOSES

OF

NEW FORMS OF MOLLUSCA

PROM

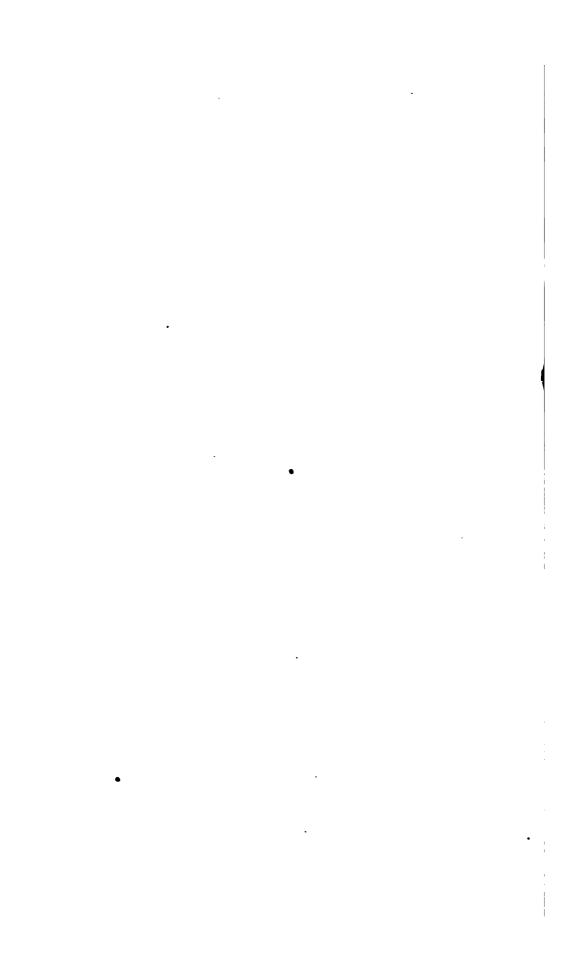
THE VANCOUVER DISTRICT.

BY

PHILIP P. CARPENTER, B.A., Ph.D.

From the Annals and Magazine of Natural History. Third Series, Vol XIV. (Nos. 5-37), pp. 423-429, December, 1864. Ibid. Vol. XV (Nos. 37-56), pp. 28-32, January, 1865.

(233)



# DIAGNOSES

O

# NEW FORMS OF MOLLUSCA

FROM

#### THE VANCOUVER DISTRICT.

BY

# PHILIP P. CARPENTER, B.A., Ph.D.

THE shells here described were mostly collected by Indian children for their excellent teacher Mr.J.G.Swan, in the neighbourhood of Neeah Bay, W. T. They were presented by him to the Smithsonian Institution, Washington, D.C.; and, in accordance with their liberal policy, the first available duplicates will be found in the British Museum or in Mr. Cuming's Collection. The species are numbered to correspond with the list in the British Association Report for 1863, pp. 626-628; see also pp. 636-664.

### 5. Mæra salmonea.

M. testa parva, solida, compacta, subquadrata; lævi, nitente, epidermide tenui cinerea induta; extus pallide, intus vivide salmoneo tincta; marginibus dorsalibus rectis, ad angulum 120° separatis, umbonibus haud extantibus; marginibus antico et ventrali regulariter late excurvatis; parte postica brevissima, hrud angulata: intus, dent. card. utraque valva ii., quorum unus bifidus; lateralibus v. dextr. æquidistantibus, ant. extante, post. parvo; nymphis rectis, haud conspicuis; cicatr. add. post. subrotundata, ant. subrhomboidea; sinu pallii satis regulariter ovali, per iv. inter v. partes interstitii porrecto. Long. 57, lat. 45, alt. 11 poll. Variat testa aurantiaca, rarius albida, rosacco tincta.

Hab. San Francisco (Pac. Rail. E. E.); Neeah Bay (Swan), plentiful; Monterey, 20 fathoms (Cooper).

In shape almost close to *Macoma crassula*, Desh. (Arctic); but that species is thinner, not glossy or salmon-coloured, and has no lateral teeth.

# 6. Angulus variegatus.

A. testa forma A. obtuso simili, sed costa interna omnino carent valde inæquilaterari, solidiore, nitente, rosacco et flavido subras

tim eleganter variegata; striis incrementi concentricis, postice extantioribus; umbonibus postice flectentibus, obtusis; parte antica prolongata, regulariter excurvata; marginibus dorsali et ventrali subparallelis, subrectis; parte postica curtiore, subangulata: intus, dent. card. utraque valva ii. minutis, quorum alter bifidus; v. dext. dent. lat., ant. curto, satis extante, post. nullo; nymphis curtis, latis, parum concavis, subito sectis, valvis postea subalatis; sinu pallii fere cicatr. ant. tenus porrecto. Long. 72, lat. 42, alt. 15.

Hab. Neeah Bay (Swan); Monterey and Catalina Island, 20-60 fathoms, rare (Cooper).

# Subgenus Miodon*.

Testa Lucinoidea, dentibus cardinalibus, ut in Cardita, elongatis; laterali antico parvo instructa.

This little group of species is intermediate in character between Astarte, Venericardia, and Lucina. It first appears in the Great Oolite, where it is represented by Astarte (Miodon) orbicularis, J. Sby. Min. Conch. pl. 444. f. 2, 3. This must not be confounded with a second and true Astarte orbicularis, by the same author, pl. 520. f. 2. It appears in Mr. Searles Wood's Crag-series as Astarte corbis. The following is the only recent species at present known.

#### 9. Miodon prolongatus.

M. testa parva, solida, tumida, compacta, albida; ventraliter antice valde prolongata, excurvata; lunula longa, rectiore, haud impressa; umbonibus antice inflectis, obtusis, valde prominentibus; margine dorsali postico parum excurvato; costis radiantibus x.-xii. latis, obtusis, marginem attingentibus, parum expressis, dorsaliter obsoletis, a liris incrementi concentricis, plus minusve distantibus, expressis, hic et illic interruptis: intus, margine a costis plus minusve obsoletim crenulato; cardine dentibus v. dextr., uno postico, inter duas fossas elongato, et lat. ant. lunulari; v. sinistr., dent. ant. triangulari, post. valde elongato, lat. ant. minimo, obsoleto; cicatr. add. subrotundatis, ventraliter sitis. Long. 23, lat. 24, alt. 16.

# Subgenus Adula, Add. (diagn. auct.).

Testa inter Modiolum et Lithophagum intermedia, cylindracea; umbonibus obtusis; parte antica longiore; ligamento subinterno, valde elongato; epidermide haud testacea.

Animal byssiferum, in cryptis affixum; musculis adductoribus

majoribus, antico ovato.

Constituted by Messrs. Adams for A. soleniformis, D'Orb., which very closely resembles the young of the Vancouver species: enlarged to receive the shells of Lithophagoid shape which are

* Th. μείων, smaller; οδούς, tooth.

moored by byssus, like Modiola. The largest known species is A. falcata, Gld., which is normally straight, but often grows in a twisted burrow. A. parasitica, Desh., and the long-known A. cinnamomea appear congeneric.

# 13. Adula stylina.

A. testa cylindracea, lithophagoidea, lævi, tenuissima, parum arcuata, subnacrea, albida, postice interdum livido tincta; epidermide nitente, lævi, solidiore, nigro-fusca: testa jun. typice modiolæformi, umbonibus subanticis, obtusissimis; margine dorsali antice (rarissime paululum, testa minima, postice) tenuiter crenuluto : testa adulta marginibus dors. et ventr. fere parallelis, ant. et post. rotundatis; umbonibus detritis, haud conspicuis, circiter sextantim antice sitis; incrustatione haud solida, densissime spongiosa, aream posticam diagonalem tegente, supra valvas prolongata, appressa; ligamento interno, postice valde prolongato; pagina interna pallida; cicatr. add. postica tumida, pyriformi, antica (quoad familiam) maxima, haud impressa, oblonga; cicatr. pedali antica magna, circulari, impressa; callositate subumbonali (testa jun.) cicatr. pedalem versus conspicua. Long. 155, lat. 4, alt. 5. Variat t. magis arcuata; ut in A. fulcata, antice tumidiore, subangulata.

Variat quoque testa attenuata.

Variat interdum ventraliter late hiante.

Hab. Neeah Bay, abundant (Swan); Monterey (Taylor).

On smashing a large lump of hard clay, bored by Pholads, Petricolids, &c., large numbers of this species, with a few of A. falcata, of all ages from '06 onwards, were found in situ. Several struggled for room in a single crypt. The unibos are abraded by the wide opening of the valves.

#### 14. Axinæa (?septentrionalis, var.) subobsoleta.

A. testa A. septentrionali simili, parum inæquilaterali, 'haud tumida; umbonibus obtusis, latis, satis prominentibus; cinerea, rufo cas-taneo varie picta; epidermide copiosa, sublaminata; marginibus ventrali et postico valde rotundatis, antico parum producto, dor-sali recto; sulcis radiantibus subobsoletis sculpta, dorsaliter sæpe evanidis: intus, marginibus ventrali valde, ant. et post. parum crenatis; lamina cardinis subangulata; dentibus paucioribus, validis, angustatis; cicatr. add. antica castanea, callosa; ligamento su!cato. Long. 13, lat. 12, alt. 7.

Hab. Neeah Bay (Swan); Shoalwater Bay (Cooper).

Middendorff's shell is figured with much stronger ribs, but may have been described from decorticated specimens.

## 15. Siphonaria Thersites.

S. testa parva, tenui, haud elevata, valde inæquilaterali, dense nigrocastanea, lævi, seu interdum costulis paucis, obtusis, obsoletis,

# 4 Dr. P. P. Carpenter on new Forms of Mollusca

radiatim vix ornata; epidermide lævi, tenui, fugaci; costa pulmonali intus et extus valde conspicua, tumente; vertice obtuso, plerumque ad quadrantem, interdum ad trientem totius longitudinis sito; intus intense nigro-fusco, margine acuto. Long. '46, lat. '33, alt. '17.

Hab. Neeah Bay (Swan).

This genus, which culminates in western tropical America and at Cape Horn, is not known in California. The Vancouver species resembles S. lateralis and its congeners, but differs in having an enormous lung-rib and no colour-rays.

# 16. Mopalia (Kennerleyi, var.) Swannii.

M. testa M. Kennerleyi typicæ simili, sed jugo fornicato, haud carinato; omnino rubida, sculptura multo minus expressa; areis lateralibus vix definitis; latera versus subgranulata; dorsum versus lineis jugum versus procedentibus, interstitiis punctatis; sinu postico latiore; limbo pallii lato, coriaceo, vix piluloso. Long. 2.4, lat. 1., div. 120°.

Hab. Tatooche Island (Swan).,

# 23. Margarita Cidaris, A. Ad.

M. testa magna, conica, Turcicoidea, tenui; albido-cinerea, nacreo-argentato; anfr. nucleosis?...(decollatis), norm. vii., subplanatis; suturis alte insculptis; superficie spirse tota valide tuberculosa, seriebus tribus, alteris postea intercalantibus; peripheria et basi rotundatis, carinatis; carinis circ. viii., haud acutis, irregularibus, scabris, haud tuberculosis; lacuna umbilicali vix conspicua; apertura subrotundata; labro tenuissimo; labio obsoleto; columella arcuata. Long. 1-1, long. spir. 65, lat. 75, div. 60°.

Hab. Neeah Bay (Swan).

Mr. A. Adams suggested the above expressive name for this very remarkable and unique shell.

# 25. Gibbula parcipicta.

G. testa solidiore, parva, conica, pallida, purpureo-fusco varie nebulosa et maculata; anfr. v., rotundatis; carinis ii. validis in spira se monstrantibus, minore intercalante; interstitiis subsuturalibus, sublævibus, inter carinas obtuse decussatis; lira peripherica definita, sæpe in spira se monstrante; basi valde rotundata; lirulis basalibus circ. v. rotundatis, subdistantibus; apertura subcirculari; columella arcuata; umbilico majore, infundibuliformi, haud angulato. Long. 14, long. spir. 17, lat. 13, div. 70°.

Hab. Neeah Bay (Swan); Santa Crux (Rowell).

#### 26. Gibbula succincta.

G. testa parva, subelevata, solidiore; livida, testa jun. strigis angustis, creberrimis, fusco-purpureis penicillata, testa adulta maculis quoque magnis nebulosa; anfr. v., subquadratis; liris obtusis medianis

et striis subobsoletis ciucta, suturis valde impressis; basi rotundata, obtuse angulata, striis ssepe evanidis spiralibus ornata, testa adulta circa umbilicum magnum, infundibuliformem, vix angulatum, ssepe tumidiore, medio obtuse impressa; apertura subquadrata, parum declivi; columella subarcuata. Long. 16, loug. spir. 07, lat. 16, div. 70°.

Hab. Neeah Bay (Swan); Lower California, on Haliosis (Rowell).

27. Gibbula lacunata.

G. testa parva, fusco-purpurea, solidiore; marginibus spiræ valde excurvatis; anfractibus nucleosis normalibus, postea iv. subplanatis, suturis distinctis, apice mamillato; sublævi, circa basin vix angulatam striolata, striolis spiralibus distantibus; apertura suborbiculari, parum declivi; labio juxta umbilicum constrictum, quasi lacunatum, lobato; columella callositate parva umbilicum constringente. Long. 11, long. spir. 05, lat. 11, div. 80°.

Hab. Neeah Bay (Swan).

#### 28. Gibbula funiculata.

G. testa parva, elevata, compacta, fusca; marginibus spirse excurvatis; anfr. vi., haud tumidis, suturis parum impressis; lirulis crebris rotundatis undique cincta, quarum v. in spira monstrantur; interstitiis parvis; basi rotundata, haud angulata; umbilico parvo, haud carinato; apertura suborbiculari, parum declivi; columella vix arcuata. Long. ·24, long. spir. ·11, lat. ·2, div. 70°.

Hab. Neeah Bay (Swan), specimen unicum.

#### 29. Hipponyx cranioides.

H. testa valde planata, majore, albida; vertice nucleoso? ...; testa adulta apice interdum subcentrali, sæpius plus minusve postico; laminis incrementi confertis, undique rapide augentibus; striis radiantibus fortioribus, confertissimis, laminarum margines sæpe crenulantibus; margine acuto; cicatr. musc. angusta, margini contigua, regione capitis minore, sæpe dextrorsum torsa; epidermide?... Long. 85, lat. 75, alt. 3.

Hab. Neeah Bay (Swan).

### 30. Bivonia compacta.

B. testa satis magna, sæpe solitaria, purpureo-fusca, spiraliter plerumque satis regulariter contorta, obsoletim cancellata seu sculptura fere evanida; testis tenacissime adhærente. Long. (plerumque) '7, lat. '3, diam. apert. '1.

Hab. Barclay Sound; abundant on Pachypoma gibberosum (Swan).

Belongs to Bivonia, Gray (not Mörch). Has the aspect of Petaloconchus macrophragma on a large scale, but is entirely destitute of internal laminiz. One specimen had a faint colu-

mellar thread for two whirls only. Operculum normathin edge, dark red.

32. Lacuna porrecta.

L. testa L. puteolo simili, sed multo majore, spira magis exserta; seu omnino fusca, seu zona pallidiore, seu pallida lineolis fuscescentibus tenuissime spiraliter ornata; epidermide tenuiter striata olivacea seu viridescente induta; tenuiore, spiraliter tenuiter striata; anfr. v., vix planatis, rapide augentibus, suturis impressis, vertice mamillato; apertura tumente; labio tenui, vix parietem attingente, intus subrecto; lacuna maxima, elongata, ad basin arcusta; peripheria expansa. Long. 52, long. spir. 2, lat. 4, div. 80°.

?Var. effusa: testa L. porrectæ simili, sed multo majore; spira elevata, satis effusa; anfr. tumidioribus, suturis valde impressis; aperturam versus magis expansa. Long. 65, long. spir. 25, lat. 5, div. 60°.

?Var. exæquata: testa L. effusæ simili, sed anfr. planatis, suturis parum impressis. Long. 5, long. spir. 2, lat. 42, div. 80°.

Hab. Neeah Bay (Swan).

The form L. exæquata is intermediate between the very different L. porrecta and L. effusa. The Lacunæ vary so much (vide Forbes & Hanley in loco) that, even with a large multitude

# of specimens, it is not easy to state what constitutes a species. 33. Lacuna (? solidula, var.) compacta.

L. testa L. solidulæ, var., simili; parva, solida, compacta, angusta, subturrita, marginibus spiræ excurvatis: aurantiaca, interdum pallidiore zonata; anfr. subplanatis, suturis distinctis; tota superficie confertissime spiraliter striolata; basi valde angulata, subplanata; apertura subquadrata; columella vix lacunata. Long. 23, long. spir. 1, lat. 17, div. 60°.

Variat testa elongata: variat quoque columella normaliter lacunata. Hab. Neeah Bay (Swan).

Possibly an extreme form of the very variable L. solidula, Lov. (= L. carinata, Gld., non A. Ad., = Modelia striata, Gabb), yet distinct in all ages. The young shells resemble small Litorina.

### . 34. Lacuna variegata.

L. testa tenui, plus minusve elevata, soluta, irregulari; adolescente fusco-purpureo; adulta livida, radiatim seu diagonaliter varie irregulariter strigata, strigis fusco-aurantiacis, sæpe ziczacformibus; anfr. vi., quorum primi compacti, apice submamillato; deia solutis, postice planatis, antice expansis; basi rotundata seu angulata; apertura subovata; labro postice porrecto; labio sæpe parietem vix attingente; columella intus recta, extus valde lacunata. Long. 3, long. spir. 16, lat. 17, div. 50°.

Hab. Neeah Bay (Swan).

Painted like L. decorata, A. Ad., which differs in having a normal growth, with very slight chink.

# 35. Isapis fenestrata.

I. testa I. ovoideæ forma et indole simili; carinis ix. acutis (quarum iv. in spira monstrantur) cincta; interstitiis duplo latioribus, concinne quadratim decussatis, litulis radiantibus acutissimis; anfr. postice tumentibus, suturis valde excavatis; peritremate continuo; labro a carinis peatinato; labio parietem parum attingente, medio calloso; umbilico angusto. Long. 18, long. spir. 13, lat. 19, div. 70°.

Hab. Neeah Bay (Swan); S. Diego and Sta. Barbara Island (Cooper).

Dr. Cooper's shells are much smaller than those from the Vancouver district, which are white and eroded, varying much in the size of the umbilicus.

#### 36. Alvania reticulata.

A. testa parva, subturrita, rufo-fusca, marginibus spiræ rectis; anfr. nucleosis ii. et dimidio, naticoideis, lævibus, tumentibus, apice mamillato; norm. iii., tumidis, suturis impressis; liris angustis, distantibus, spiralibus circ. xii. (quarum iv.-vi. in spira monstrantur), et lirulis radiantibus, supra transeuntibus, haud nodulosis, secundum interstitia incurvatis, eleganter exsculpta; interstitiis altis, quadratis; peritremate continuo, subrotundato, acutiore. Long. '085, long. spir. '05, lat. '04, div. 30°.

Hab. Neeah Bay; two specimens in shell-washings (Swan).

# 37. Alvania filosa.

A. testa A. reticulatæ indole et colore, haud sculptura, simili; multo majore, elongata; anfr. nucl.?... (detritis), norm. iv.; striis parum separatis circ. xviii. (quarum circ. xii. in spira monstrantur) cincta; rugulis radiantibus posticis creberrimis, haud expressis, circa peripheriam evanidis; peritremate continuo; columella rufo-purpureo tincta. Long. 13, long. spir. 09, lat. 06, div. 20°.

Hab. Neeah Bay; one specimen in shell-washings (Swan).

#### 38. ? Assiminea subrotundata.

?A. testa haud parva, lævi, tenui, fusco-olivacea; anfr. nucl.?...(decollatis); norm. v., rapide sugentibus, subrotundatis; marginibus spiræ rectis, suturis valde impressis; basi rotundata, haud umbilicata; apertura rotundato-ovali, intus fuscescente; peritremate continuo; labro acuto; labio parum calloso; columella arcuata. Long. '28, long. spir. '13, lat. '2, div. 65°.

Hab. Neeah Bay; one specimen among Lacuna (Swan). May prove to be a large Hydrobia.

#### 89. ?Paludinella castanea.

P. testa compacta, solidiore, fusco-castanea, marginibus spiræ rec-16 241 tioribus; rugulosa, lineis distantibus spiralibus irregulariter insculpta; anfr. nucleosis?.... (detritis), vertice late mamillato; norm. iv., rapidius augentibus, tumidioribus, suturis satis imprensis; basi regulariter excurvata, vix rimata; apertura suborbiculari, haud continua; labro acuto; labio supra parietem obsoleto, supra columellam arcuatam intus colloso: operculo, anfr. iv. hand rapide augentibus. Long. 21, long. spir. 09, lat. 17, div. 70°. Hab. Neeah Bay; one specimen among Lacuna (Swan). May be an aberrant Assiminea.

# 40. Mangelia crebricostata.

M. testa tereti, rufo-fusca, albo zonata; anfr. nucl.?...(decollatis); norm. v. elongatis, subrotundatis, suturis impressis; costis radiantibus, obtusis, subrectis, circ. xv., spiram ascendentibus; sculptura spirali?... (detrita); apertura pyriformi, antrorsum in canalem brevem attenuata; labro postice parum sinuato; labio conspicuo. Long. 54, long. spir. 3, lat. 2, div. 28°.

Hab. Neeah Bay; 1 specimen (Swan).

# 41. Mangelia interfossa.

M. testa parva, valde attenuata, rufo-fusca, marginibus spiræ parum excurvatis; anfr. nucl. ii., ut in Chrysodomo irregularibus, apice mamillato; norm. vi., parum excurvatis, haud tabulatis, suturis distinctis; costis radiantibus circ. xv., angustis, extantibus; costulis spiralibus circ. xv., quarum circ. v. seu vi. in spira monstrantur, angustis, supra costas transcuntibus, ad intersectiones parum nodulosis; interstitiis altis, quadratis; basi effusa; apertura subpyriformi; labro acuto, postice vix emarginato; labio tenui. Long. 38, long. spir. 22, lat. 13, div. 25°.

Hab. Neeah Bay; very rare (Swan).

# 42. ? Mangelia tabulata.

?M. testa parva, solidissima, luride rufo-fusca, marginibus spiræ excurvatis; vertice nucleoso chalcedonico (eroso); anfr. norm. v., postice rectangulatim tabulatis, suturis impressis; costis radiantibus circ. xvi., validis, obtusis, circiter basim attenuatam obsoletis; costis spiralibus in spira iii.-iv. angustis, extantibus, supra cost. rad. nodosis; interstitiis alte insculptis, subquadratis; costis circa basim circiter vii., quadratim extantibus, interstitiis a lineis incrementi vix decussatis; canali curta, aperta; labro acutiore, ad angulum posticum vix sinuato; labio tenui; columella obsolete uniplicata. Long. 45, long. spir. 26, lat. 2, div. 35°.

Hab. Neeah Bay; several worn specimens (Swan).

The distinct fold near the base of the pillar may require the formation of a new genus. 242

# 43. ?Daphnella effusa.

?D. testa gracillima, maxime effusa, rufo-fusca; anfr. angustis, elongatis, suturis impressis; striis spiralibus crebris a lineis incrementi decussatis ornata; labro tenuiore, postice vix sinuato. Long. '65, long. spir. '45, lat. '22, div. 30°.

Hab. Neeah Bay; one broken specimen (Swan).

#### 44. Odostomia satura.

O. testa magna, alba, lævi, solidiore, satis elevata; anfr. nucl. ii., angustis, subplanorboideis, valde decliviter sitis, dextrorsum immersis, sinistrorsum extantibus; norm. v., tumidioribus, regulariter convexis, suturis impressis; basi rotundata, tumente, quasi umbilicata; apertura ovata; labro vix sinuato; labio tenui, appresso; plica columellari valida, subantica, parieti haud contigua, transversa. Long. 26, long. spir. 14, lat. 13, div. 40°.

Hab. Neeah Bay; rare (Swan).

Var. pupiformis: anfr. primis valde depressis, planatis; vertice mamillato; anfr. ult. normali. Specimen unicum, quasi monstruosum. Long. 19, long. spir. 1, lat. 12, div. 45°.

#### 44 b. Odostomia (? var.) Gouldii.

O. testa solida, alba, ovoidea, marginibus spiræ valde excurvatis; vert. nucl. décliviter immerso; anfr. norm. v., subplanatis, suturis valde impressis; peripheria haud angulata; basi excurvata, haud tumida; apertura ovata, postice parum constricta; labro solido; labio conspicuo, rimam umbilicalem formante; plica submediana, solida, extante, haud declivi. Long. 23, long. spir. 13, lat. 1, div. 30°.

Hab. Neeah Bay; very rare (Swan).

Agrees in some respects better with the diagnosis of O. gravida, Gould, than do Col. Jewett's shells, from which it is presumed the species was described. These large forms appear very variable.

# 45. Odostomia nuciformis.

O. testa magna, compacta, lævi, solida, alba; anfr. nucl.?...(erosis), vertice submamiliato; anfr. norm. v., subplanatis, subelongatis; spira brevi, marginibus valde excurvatis; basi elongata, haud umbilicata; apertura subovali, postice angusta; labro solido; labio tenui; plica antica, solida, obtusa, transversa, parietem haud attingente. Long. 3, long. spir. 14, lat. 18, div. 70°.

Hab. Neeah Bay; extremely rare (Swan).

#### 45 b. Odostomia (? var.) avellana.

O. testa O. nuciformi indole simili, sed spira valde prolongata. Long. 32, long. spir. 16, lat. 16, div. 50°.

Hab. Neeah Bay; one specimen (Swan).

Like a gigantic form of O. conoidalis.

# 47. Odostomia tenuisculpta.

O. testa ovoidea, subelevata, albida, tenui, diaphana; anfr. nucl. subverticaliter immersis, angustis; norm. iii., parum tumidis, suturis impressis, sulculis spiralibus latioribus haud impressis, distantibus, in spira iii., circa basim rotundatam circ. vi. subobsoletis; apertura ovata; plica acuta, declivi, parva, parieti contigua; labro acuto; labio indistincto; columella antice parum effusa. Long. 1, long. spir. 04, lat. 06, div. 60°.

Hab. Necah Bay; one specimen (Swan).

#### 48. Scalaria Indianorum.

S. testa gracili, turrita, alba; anfr. circ. x., rotundatis, parum separatis, lævibus; basi simplici, haud umbilicata; costis viii.—xv. (plerumque xii.), acutioribus, subreflexis, interdum latis, plerumque lineis irregularibus margini spiræ recto parallelis ascendentibus, rarius juxta suturam subnodosis; apertura ovata. Long. 1.05, long. spir. 8, lat. 36, div. 28°.

Hab. Neeah Bay (Swan).

Strung as ornaments by the Indian children. Intermediate between S. communis and S. Turtonis, and scarcely differs from "S. Georgettina, Kien.," Mus. Cum. no. 34, Brazil.

# 48 b. Scalaria (? Indianorum, var.) tincta.

S. ?Indianorum costis acutis, haud reflexis; anfractibus postice fuscopurpureo tinctis.

Hab. Cerros Island (Ayres); S. Pedro (Cooper).

The Lower-Californian shell may prove distinct. It is like S. regularis, Cpr., but without the spiral sculpture.

# Subgenus OPALIA, H. & A. Ad. (diagn. auct.).

Scalariæ varicibus obtusis, irregularibus, parum definitis : sculptura basim versus interrupta.

Ex. in Mus. Cum.:—O. crassicostata, O. crassilabrum, O. diadema, O. funiculata, O. crenata, O. granulosa, O. australis, O. bicarinata, O. attenuata, Pse., O. M'Andreæ, Fbs., sp. ined. (West Indies). Other West-coast species are O. crenatoides and var. insculpta, O. spongiosa, and O. retiporosa.

The species of this very natural group were arranged by Messrs. Adams partly under *Opalia* and partly under *Cirsotrema*.

# 49. Opalia borealis, Gld.

O. testa O. australi simillima, valde elongata; anfr. xii., planatis, suturis parum impressis; testa jun. costis validissimis viii. latis, rotundatis, peripheriam attingentibus, interdum interruptis; testa adulta sæpius 244

obsoletis, ad peripheriam evanidis; circa basim totam usque ad peripheriam angulatam lamina spirali, planata; apertura oyali; sota superficie minutissime spiraliter striolata: operculo paucispirali, nucleo ad trientem longitudinis sito, lineis incrementi validis. Long. 1.7, long. spir. 1.3, lat. .53, div. 20°.

Hab. Puget Sound (U. S. Expl. Exp.); Neeah Bay and Tatooche Island (Swan).

This species was doubtfully indicated, not described, by Dr. Gould, in the 'E. E. Moll.' p. 207. It appears to be exactly identical with "crassicostata, Australia," in Brit. Mus., and is nearly related to Ochotensis, Midd. It must not be confounded with Acirsa borealis, Beck. One young specimen has the ten ribs of O. australis.

### 50. Cerithiopsis munita

C. testa C. purpureæ simili, sed angustiore, marginibus spiræ fere rectis; costis spiralibus magis expressis, testa adulta minus nodukosis; basi æqualiter lirulata. Long. 34, long. spir. 24, lat. 11, div. 20°.

Hab. Neeah Bay; common (Swan).

# 51. Cerithiopsis columna.

C. testa majore, valde elongata, purpureo-fusca; anfr. norm. ix., planatis, suturis distinctis; seriebus iii. nodulorum spiralibus valde appressorum, creberrimorum, interstitiis parvis, altis; aliis interdum intercalantibus; lira quarta supra suturam haud valde nodulosa, liris duabus haud expressis aream suturalem circumeuntibus; basi planata, haud sculpta, ad peripheriam obtuse angulata; apertura quadrata. Long. 38, long. spir. 32, lat. 1, div. 10°.

Hab. Neeah Bay; several worn specimens (Swan): Monterey; rolled fragment of larger shell (Cooper).

Easily recognized, even in portions, by the "strung-fig" pattern.

# 55. Cancellaria modesta.

C. testa elata, subrufa, trichotropiformi, marginibus spiræ rectis; anfr. norm. v., rotundatis, postice subtabulatis, suturis impressis; costis spiralibus obtusis, distantibus, in spira circ. iv., circa basim prolongatam circ. vii., aliis minoribus interdum intercalantibus; interstitiis secundum incrementa, decussatis; apertura subquadrata; columella plicis duabus declivibus anticis et costulis basalibus ornata; labio nullo. Long. 68, long. spir. 34, lat. 34, div. 50°.

Hab. Neeah Bay; one specimen and fragment (Swan).

# 56. Velutina prolongata.

V. testa majore, subplanata, tenuiore, carnea, spira minima; anfr. iii.
245

# 12 Dr. P. P. Carpenter on new Forms of Mollusca.

et dimidio, rapidissime augentibus; vertice vix conspicuo; anfrult. antice valde porrecto; regione columellari incurvata; labio valido; axi haud rimata; epidermide tenui, rugis incrementi ornata, spiraliter haud striata. Long. 1, long. spir. 15, lat. 95, div. 140°.

Hab. Neeah Bay; rare (Swan).

246

F.

# DIAGNOSES

OF

# NEW FORMS OF MOLLUSCA

FROM

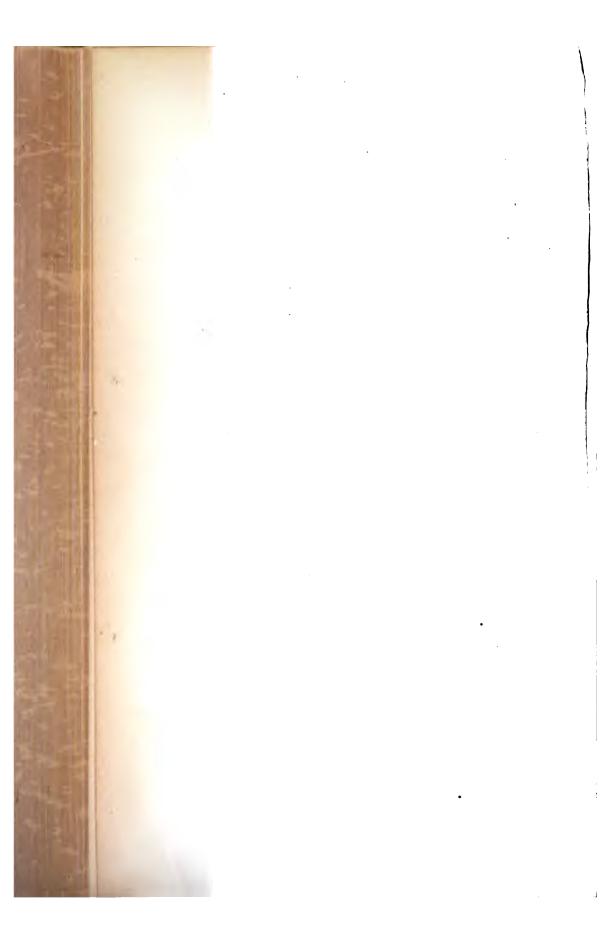
# THE VANCOUVER DISTRICT.

BY

PHILIP P. CARPENTER, B.A., PH. D.

From the Proceedings of the Zoölogical Society of London, pp. 201-204, February 14, 1865.

(247)



DIAGNOSES OF NEW FORMS OF MOLLUSCA FROM THE VAN-COUVER DISTRICT. BY PHILIP P. CARPENTER, B.A., PH.D.

#### TEBEBBATULA UNGUICULA, n. s.

T. t. juniore "Terebratulinæ capiti-serpentis" simillima, sed latiore, subtriangulata; punctis valde conspicuis; costis conspicuis, interdum obtusioribus, aliis intercalantibus; intus, amento suboctiformi, postice aperto, cruris diagona/ibus cardini affixis: testa adulta valva inferiore subrotundata, marginem versus haud planata; umbone valde tumente, latiore; striis radiantihus, ut in "T. capite-serpentis" conspicuis; marginibus crenulatis, haud undatis; intus amento majore, bisinuato, dorsaliter haud continuo, calcaribus duobus munito.

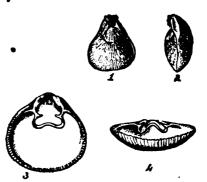
Long. 6, lat. 5, alt. 3 poll.

Hab. San Diego, 6 fm.; Monterey, not rare in 20 fm., (in California State Geological Survey) Cooper. Neeah Bay (valve), Swan.

Vancouver, Forbes.

The specimens sent by Dr. Cooper were all of small size, and, from the intercalation of riblets near the margin, clearly immature. They presented the incomplete loop of the restricted genus to which Dr. Cooper affiliated them. Notwithstanding, as both Davidson and Woodward state that the young of the British species has the loop similarly open, it remained doubtful whether this might not prove conspecific. Messrs. Reeve and Hanley unhesitatingly pronounced them to be "caput-serpentis, jun.," the latter gentleman stating that they presented the peculiar form of that species which belongs to the Mediterranean examples. Dr. Forbes, however, was fortunate enough to

obtain an adult shell, which passed into the Cumingian Collection Having removed the animal matter with great care, the loop was found to retain the form seen in the young shell, only perhaps still more open. This is the first recent species of the genus which has been discovered with a sculptured surface, and affords an instructive lesson not to rely on external characters.



Terebratula unguicula: 1, 2, outside views of Mr. Cuming's adult specimen, natural size: 3, 4, inside views of the upper valve, slightly magnified.

The outline of the adult is much rounder, and the margin blunter, than in T. caput-serpentis. Inside, the noncompletion of the somewhat ω-shaped loop is a very obvious character. This is large ir proportion, extending to about two-fifths of the length and one-third of the greatest breadth of the shell. It is bent upwards in the middle, as seen from the partly opened valves; with a double wave at the sides, as seen from the direction of the opposite valve. Two spurs ascend from the crests of the side waves, as though preparing to complete the loop. The similar Terebratella angustata from Japan when of the same size as Dr. Cooper's specimens, has the loop quite continuous.

#### Subgenus NETTASTOMELLAT.

Pholadidea: valvis postice in calycem testaceum planatum prolongatis; calyce coriaceo nullo.

NETTASTOMELLA DARWINII, Sby. (diag. auct.).

- N. t. minore, elongata, tenuissima; parte postica costis radiantibus acutioribus circ. vii. et laminis concentricis acutissimis, distantibus, antice continuis, elegantissime ornata; rostris pla-
- * Dr. Cooper having forwarded for my inspection a large and beautifully per fect specimen of the true Waldheimia californica, I have compared it with the series of the very variable W. globosa in the Smithsonian Museum, undoubtedly from Orange Harbour. The California shell, however, has a strong brownish-red tinge, and does not display the beautiful veining of the Maghellan species.
- † Th. νῆττα, a duck, στόμα, mouth. The name Netastoma, given in the Brit. Assoc. Report.' 1863, being preoccupied in another subkingdom, according to Dr. Cooper, it is thought necessary to vary the termination.

250

natis, postice divergentibus, striis incrementi crebris acutis, aliter haud sculpta; parte antica t. jun. aperta, adultæ clausa; clausis tenuissimis, secundum incrementa undulatis, super umbones prolongatis, umbilicos postice formantibus; epidermide fugaci, tenui, pallide viridi.

Hab. Monterey, Rich.; Vancouver, Lord; S. Diego, Cooper.

= Pholas darwinii, Sby.

Jouanettia durwinii, Mus. Cuming.
 Parapholas penita, Tryon, Mon. Phol.

This remarkable shell differs from Jouanettia in having both valves equal; from Pholadidea proper in having no coriaceous cup, its place being supplied by a flattened prolongation from each valve, like a duck's bill in miniature. In Mr. Lord's specimen (preserved in the British Museum), though the valves are closed, the prolongations are widely divergent, as when the bird utters its cheerful "quack." The loose, thin epidermis appears to have covered the bill as well as the valves. Mr. Tryon had probably not seen a specimen, else he could hardly have affiliated so very different a shell to Pholadidea penita. The original specimen is said to have come from Chili.

#### DARINA DECLIVIS.

D. t. tenuissima, planata, elliptica, Machæræformi, utroque latere hiante; cinerea, epidermide fortiore induta; marginibus regulariter excurvatis; umbonibus haud conspicuis, ad duas inter quinque partes longitudinis postice sitis: intus cartilagine spathula elongata, dorsum versus utraque valva decliviter sita, a ligamento lamina extante tenuissima separata; dente cardinali laminato, extante, curtiore; lateralibus vix conspicuis; sinu pallii ovali, fere ad medium porrecto.

Long. 1.77, lat. 85, alt. 34 poll. Hab. Vancouver's Island (Forbes).

The only other species of *Darina* known is from the Straits of Maghellan. The northern shell may have been passed over as the young of *Machæra patula*, to which it bears a strong external resemblance.

#### SAXIDOMUS BREVISIPHONATUS.

S. t. subovali, tenuiore, subplanata, albida, epidermide pallide olivacea induta; tota superficie rugis concentricis, crebris, valde obtusis, et undis incrementi interdum majoribus, ornata; marginibus subæqua/iter excurvatis, maxime ventrali: intus cardine tenuiore, dente antico elongato; sinu pallii parvo, ad trientem interstitii porrecto, latiore.

Long. 2.65, lat. 2.05, alt. 1.15 poll. Hab. ?Vancouver, ?Japan (Mus. Cuming).

A very distinct species, in shape and hinge not unlike Callista, but without lunule. It is more rounded and flatter than the three typical Californian species, and known at once by the very small mantlebend. From four to six blunt riblets are seen on each of the very

blunt waves of growth. The shell was sent me as from Dr. Forbes's Vancouver collections, and is so quoted in the Br. Assoc. Rep. 1863, p. 607; but Mr. Cuming subsequently stated his belief that it came from Japan. It may be allowable to state that many of the species included in Saxidomus by authors are more correctly rough forms of Tapes, of the decussata-type; the true Saxidomi differing from that genus (as Callista does from Venus) in having an additional pseudolateral anterior tooth. This is very evident in the young shell, which has a much rounder outline than the adult, and can scarcely be distinguished from Callista, except by the absence of lunule.

252

# DIAGNOSES

OF

NEW SPECIES AND A NEW GENUS OF MOLLUSKS,

FROM

THE REIGEN MAZATLAN COLLECTION;

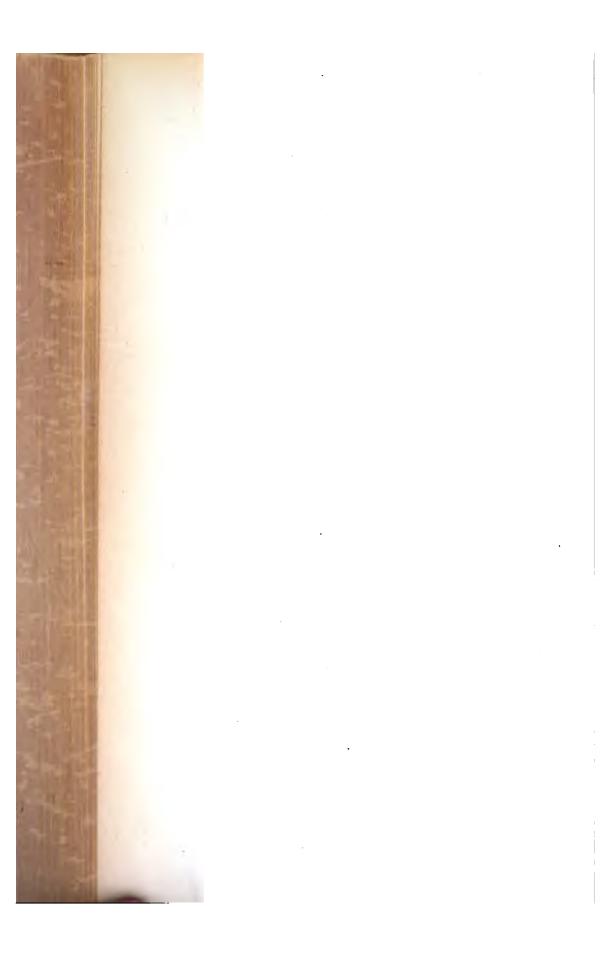
WITH AN ACCOUNT OF ADDITIONAL SPECIMENS PRESENTED TO THE BRITISH MUSEUM.

BY

PHILIP P. CARPENTER, B. A., Ph. D.

From the Proceedings of the Zoölogical Society of London, pp. 268-273, March 14, 1865.

(253)



DIAGNOSES OF NEW SPECIES AND A NEW GENUS OF MOL-LUSKS FROM THE REIGEN MAZATLAN COLLECTION: WITH AN ACCOUNT OF ADDITIONAL SPECIMENS PRESENTED TO THE BRITISH MUSEUM. BY PHILIP P. CARPENTER, B.A., Ph.D.

After the publication of the British Museum Mazatlan Catalogue, the backs of several fresh Spondylus-valves were examined by Mr. R. D. Darbishire and myself. Among the specimens were several which were deemed worthy of being added to the national collection; they were deposited there, with a MS. appendix to the Catalogue, in 1858. As it is not judged necessary to print this separately, I have (with the permission of Dr. Gray) transcribed what should be placed on record, in hopes that it may not be judged out of place in the 'Proceedings.' Those who use the Mazatlan Catalogue are requested to observe not only the corrections in the Appendix, pp. 547-552, but also those made in the Review of Professor C. B. Adams's Panama Catalogue, P. Z. S. 1863, p. 339; and in the British Association Reports, 1863, pp. 543 et seq. The numbers, both of species and of tablets, are continued from the Mazatlan Catalogue, and correspond with those in the Report. The student of the Gulf fauna should also consult the account of Mr. Xantus's

Cape St. Lucas shells in the 'Annals Nat. Hist.' 1864, and in the Report, pp. 616-626 *.

704. Cellepora areolata, Busk+.

Tablet 2540 contains a specimen on Omphalius ligulatus.

705. Membranipora ? flemingii, Busk †.

Tablet 2541 contains a group on O. ligulatus.

* The following additional specimens from the Reigen Collection have been presented to the British Museum .

Tablet.

12*. A group on Omphalius ligulatus. 13*. Lepralia adpressa and Membranipora, sp. ind., on ditto.

42. Young opposite valve of ? Solecurius, perhaps conspecific. 201*. Four young valves (smallest 05 by 034) probably of this species

266*. Minute transparent valve, 028 across, teeth unformed; perhaps of this species.

358*. Two specimens; margin irregular.
594*. Several specimens in *Uvanilla unguis*; one, not having room within, has made a case for itself outside the *Uvanilla*.

642*. A pair, ·3 by ·15; probably an older state of the same species, Barbatia alternata.

60*. A minute, transparent valve, '045 by '024, without teeth; resembling "? Saxicava fragilis, Nyst," Jeffr., in 'Ann. Nat. Hist.,' Aug. 1858.
486*. A young shell, '06 across, laid open; crowded inside, especially near the

umbones, with a pinkish mass of young ones, about 0018 in length.

500. A younger pair, much more transverse, transparent, without concentric ridges, the lateral teeth in one valve being simply the raising of the dorsal margins.

833*. Two young specimens, nestling among Nullipore on Fissurella alba. 869*. Two specimens, with egg-cases arranged in pattern like Orbitolites.

876*. One specimen, curiously mended after fracture.

877*. One specimen, with columella curiously contorted. 1023*. One specimen, with ribs rounded and aspect of Siphonaria lecanium: probably a distinct species

1058*. One young specimen, probably conspecific, though only 07 by 047; there is no trace of spire.

1059*. Three specimens; broad form.

1468*. Fragment of Spondylus calcifer, with basal supports of Hipponyx ?serratus, in burrow of Lithophagus plumula.

1795*. Two specimens with five intercalary teeth.

1834*. One specimen with the canal bent back, as in Cassidaria.

2221*. One specimen, mended after severe fracture.

22:23*. One specimen; columellar fold bild.
22:24*. Two specimens; columella bent and straight.
22:25*. One specimen; labrum thin.

2226*. One specimen; ribs close.

2376*. One specimen, dwarf form; nodulous, as in N. nodulifera, Phil.

2516. An opposite larger valve, since found, in which there is only one distinct posterior tooth, and the anterior hooked tooth is separating into two.

[2534. One specimen of Vitrinella ? tricarinata, jun., of which the ribs are nodulous in the young state. If rightly determined, this adds no. 710 to the list of species.]

2536. A nuclear shell, 046 across of Naticoid shape, very finely striated in each direction. It is probably a young Hipponyx

† Both of these species were kindly identified by Mr. G. Busk.

### Genus Cycladei LA.

Testa bivalvis, tenuis, æquilateralis, æquivalvis, haud hians, um~ bonibus planatis. Ligamentum tenuissimum, externum. Cardo linea curvata, dent. lat. distantibus, card. transversis, haud radiantibus.

# 56. Cycladella papyracea, n. sp.

C. t. tenuissima, subdiaphana, epidermide tenui induta, planata, suborbiculari; concentrice fortiter lirata, liris rotundatis, intus excavatis; tota superficie lineis granulosis radiantibus creberrimis minutissime cælata; dent. card. i.-ii. transversis, mar-

gini dorsali subparallelis; dent. lat. validis.

"Tellina?eburnea, Hanl." (fragments only), Maz. Cat. no. 56.

Mr. Hanley kindly sent for my inspection a perfect pair (as "Lepton"), which he had found nestling in a burrow in Spondylus. The hinge more resembles Cyclas (Lam.) than any other known genus. Its great peculiarity is, that the cardinal teeth, instead of radiating from the umbo, fall in the curve of the hinge-line, as though uniting the lateral teeth. The shell is too thin (being deeply indented within by the concentric waves) to make out the pallial line; but no trace of sinus is visible. It may therefore rank, provisionally, under Kelliadæ, although in other respects its affinities appear to be with Œdalia and Cooperella. The ligament appears little more than a prolongation of the epidermis. Beside the transverse cardinal teeth, there is in each valve a curved line, slightly raised like the end of a finger-nail, which bounds what would be the lunule in other shells.

Long. 1, lat. 123, alt. 045.

Hab. Mazatlan; one perfect specimen from Havre Collection (Mus. Hanl.); fragments, Liverpool Collection.

# 706. ? MONTACUTA OBTUSA, n. sp.

IM. t. planata, valde inæquilaterali, subrhomboidea; subdiaphana seu chalcedonica, haud punctata, lævi; marginibus plerumque regulariter excurvatis, dorsali recto, umbonibus haud prominentibus; cardine, utraque in valva, dente uno cardinali et fossa ligamentali ; dent lut. altera valva elongatis, rectis, altera vix conspicuis.

Differs from ? M. dionæa in the elongation of the lateral teeth, and in the possession of a distinct cardinal tooth in each valve.

Long. 047, lat. '06, alt. '01.

Hab. Mazatlan; two fresh specimens, Liverpool Collection. Tablet 2530 contains the larger specimen; the other is trans parent.

#### 696. Pectunculus, sp. ind.

Tablet 2531 contains a minute valve, '033 across; outside wet ciose, prominent concentric ridges, foliated by about twenty-force 17 257

rounded ribs, which are evanescent near the umbo. Inside with a very few strong teeth, developed in a curved line.

#### 698. Scissurella rimuloides, n. sp.

S. t. rapide augente, albida, tenuissima; apice celato; anfr. iii., radiatim liratis, liris subdistantibus, acutis, obliquis; umbilico magno; labro declivi, haud fisso, sed apertura postica, ut in "Rimula" formata, subquadrata, elongata; liris transversis gradus testæ increscentis definientibus, peritremate continuo, obliquo.

Only one specimen was found of this beautiful little species, the first known from America. It looks like a Velutina crossed by sharp ribs in the direction of the slanting mouth. In the first whorl the ribs are very close. It then assumes its normal sculpture, but there is nearly a whorl before there is any trace of incision. This appears to have begun as a slit, which was afterwards closed up. A band, marked off by ten transverse ribs showing stages of growth. encircles the shell as far as the hole, which is long and somewhat .-ctangular; but there is no band between the hole and the outer lip. The shell furnishes a complete transition to Rimula. It is preserved on tablet 2532.

Long. .023, long. spir. .003, lat. .03; div. 140°.

Hab. Mazatlan; off Spondylus calcifer; Liverpool Collection.

# 599. VITRINELLA ORNATA, D. Sp.

V. t. subdiscoidea, diaphana, tenuissima; anfr. iv., quorum iii. primi nucleosi, insculpti; ultimo carina mazima circa peripheriam; postice subangulata, rugis radiantibus et striolis spiralibus ornata; antice carinata, carina nodosa; basi carina altera et rugis radiantibus ornata; umbilico angulato, satis magno; labro a carina indentato.

Long. 015, lat. 028-035; div. (circ.) 175°.

Hab. Mazatlan; one specimen off Spondylus, on tablet 2533; Liverpool Collection.

#### 700. VITRINELLA TENUISCULPTA, n. sp.

V. t. planata, diaphana, tenuissima; anf. iii. et dimidio, quorum iii. nucleosi; striis elevatis, spiralibus, quarum una magna, quasi carina prope suturam sculpta; peripheria haud angulata; basi bis angulata, interdum rugis radiantibus distantibus ornata; umbilico satis magno, carinato; apertura undata, sub-

The sculpture is not uniform over the last whorl. The principal diagnostic features are the biangulated base, the infrasutural keel,

and the rounded periphery.

Long. 016, long. spir. 0, lat. 023-03; div. 180°.

Hab. Mazatlan; one specimen off Spondylus, on tablet 2534 Liverpool Collection.

701. ? VITRINELLA, sp. icd.

Tablet 2535 contains a fragment, '085 across, of what was probably a gigantic species of this genus or of Cyclotrema, strongly keeled.

- 492. DIALA PAUPERCULA, C. B. Ad.
- = Cingula paupercula, C. B. Ad. Pan. Shells, no. : diagnos mutata.
  - =! Odostomia mamillata, Maz. Cat. no. 492: diagnosi aucta.
  - D. t. nitida, solida; vert. nucl. anfr. iv., lirulis spiralibus et radiantibus tenuiter decussato; t. adulta decollata, vertice mamillato; anfr. norm. iv.; peritremate continuo; basi obtuse angulata, lacuna umbilicali a labio separato formata.

Long. 085, long. spirse 055, lat. 05; div. 34°

The fortunate discovery of a perfect young specimen and some adult shells in the shell-washings of Professor Adams's collection enables us to explain the anomalies described in the Mazatlan Catalogue, where the solitary dead shell was referred, with doubt, to Odostomia, in consequence of its truncated apex. It was not possible to recognize in it Professor Adams's "Cingula," since that was described as having the apex "subacute," and the angular base and continuous peritreme were not mentioned. The nuclear whorls are sculptured as in Alaba supralirata; but the vertex, instead of being persistent as in that genus, appears to be always decollated in the The shell has the peculiar glossy texture of Diala. adult.

- 702. MANGELIA SULCATA, n. sp.
- M. t. subturrita, albida, apice obtuso; anfr. vii., tumidioribus, liris vii., obtusis, rectis, vix angulatis ; sulcis spiralibis creberrimis, circa basim continuis; labro? ... [fracto].

  Long. '2, long. sp. '12, lat. '07; div. 35°.

  Hab. Mazallan; one specimen off Spondylus, on tablet 2538;

Liverpool Collection.

703. ? Torinia, sp. in.

Tablet 2539 contains a small shell, '035 across, consisting of 31 smooth, flattened, sinistral whorls; with a distinct suture, but not umbilicated. In a larger specimen (unfortunately lost), under the microscope this sinistral vertex appeared turned completely upside down, with more than half a whorl of an orbicular shell, white, sculptured like Vitrinella, with a very strong peripherical keel, and other smaller keels, decussated by radiating rugæ. This mode of growth is exactly as in the young Torinia; but the adult must have been very distinct from any known species, and perhaps did not belong to any described genus.

- 550. Mucronalia involuta, n. sp.
- M. t. parva, tenui, albida, irregulari, marginibus spiræ valde excurvatis; vertice decliri; anf. norm. vi. + . . . . satis excur-259

vatis, suturis valde impressis; basi prolongata, obtusa; aperatura ovali, postice angusta; labro acuto; labio tenuissimo.

Long. 105, long. spir '068, lat. '033; div. 20°.

— Leiostraca ?recta, Maz. Cat. in loco: non C. B. Ad.

#### 551. LEIOSTRACA PRODUCTA, n. sp.

L. t. parva, albida, subfusiformi, marginibus spiræ rectis; vertice acutiore, recto; anfr. norm. ix., planatis, suturis vix conspicuis; peripheria satis rotundata; basi rapide angustata, postea producta; apertura subrhomboidea, axi antice acuta, angulata; labro acuto; labio tenui.

Long 123, long. spir 108, lat 1046; div. 23%.

= Leiostraca? solitaria, Maz Cat., in loco: non C. B. Ad.

This species is easily recognized by its very peculiar sharply-pointed beak; in shape like a young Rostellaria, without the canal.

# 652. Anachis Tæniata, Phil.

Columbella tæniata, Phil. in Zeit. J. Mal. 1846, no. 26 (non Ad. Rve. in Voy Samarang)

=Anachis Gaskoini, Cpr. in Maz. Cat p. 510. no. 652.

Variat lineis spiralibus fuscis viii., quarum iii. in spira monstrantur; maculis alternatis inter secundam et tertiam sitis.

Variat quoque maculis evanescentibus.

Hab. Callao (teste Gaskoin); Mazatlan (E. B. Philippi, Reigen);

Cape St. Lucas (Xantus).

It appears that Mr. Gaskoin was not acquainted with Philippi's species, which had not then reached the Cumingian Collection; as he pronounced M. Reigen's specimen to be new, and suggested the specific name in the Mazatlan Catalogue. It would have avoided a double synonymy, could the name tæniata have been retained for the Samarang shell, and Mr. Gaskoin's for this. The Cape St. Lucas shells vary as above in licated.

# 650. ?Anachis serrata, Cpr.

Maz. Cat. no. 650, p. 509. Perfect specimens of this singular species having been found at Cape St. Lucas by Mr. Xantus, the diagnosis may be thus completed:—

Epidermide fimbriata, lirulas spirales eleganter decussante; labri

denticulis variantibus, interdum subobsoletis. Long. 28 long. spir. 15. lat 13; div. 40°.

With the sculpture and general aspect of a small Cantharus, it has the mouth of an Anachis. The operculum, and therefore the generic relations, are not yet known*.

* The following additions and corrections may be useful to the students of the British Museum Catalogue:—

Species 181 Area multicostata further differs from A. grandis in the epidermis being soft and very finely hairy.

223. The length should be 1.1.

319. For "labio nullo" read "tenuissimo"

330 The nuclear shell has two whorls, Ampullaria-shaped.

367. Add to diagnosis, "operculo concavo, linea elevata suturam definiente."
368. Add to diagnosis, "operculo vix concavo, suturis minus definitis."
373. Add to diagnosis, "operculo concavo, suturis distinctis, peripheriam simus linea elevata instructis." The species was found living among the small Olivella.

376. Add to diagnosis, "operculo concavo, suturis vix definitis." Living

among Olivella.

501. Instead of the specimen from which the description in the text wa writen, tablet 1966 contains a much finer shell, since found, which allows of th following additions to the diagnosis:—"vert nucl. parvo, satis extante, decls when site; anfr. norm. v; interstitis carinarum transversim rugulosis; labralidiors. Long. 087, long. spir 057, lat. 038."

510. A very beautiful shell, found in the refuse of Professor Adams's Panam

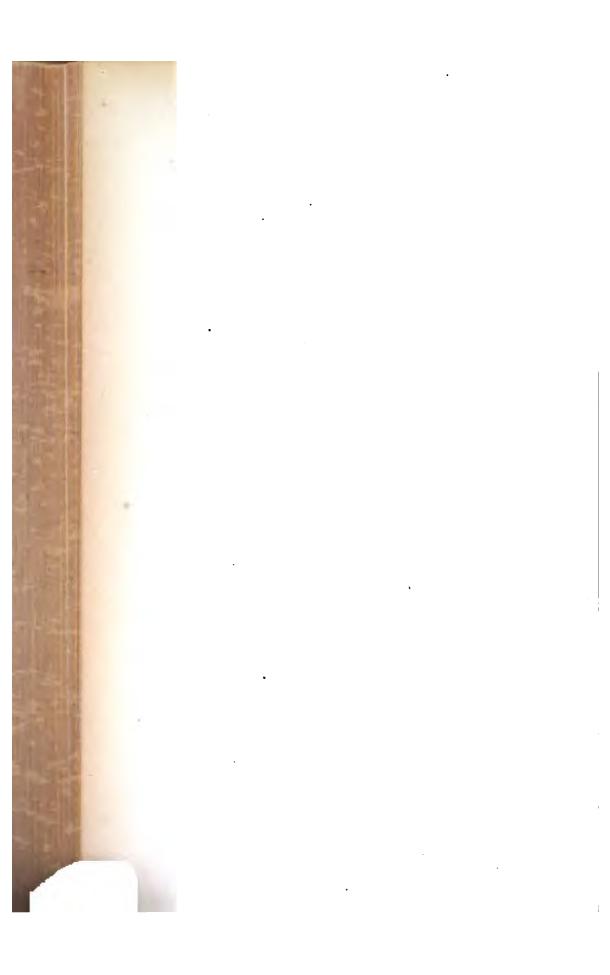
sollection, is probably of this species, though the sutural cancellations are close It has one more whorl vertex Chemnitzoid, of three Helicoid whorls, scarcel

projecting; spex hidden
650. From perfect Cape St. Lucas specimens, add the following to diagnosis
—"epidermide fimbriata, lirulas spirales eleganter decussante."
Page 312. Add to the diagnoses of opercula of Vermetida:—

"(A.) Operculum corneum, intus convexum, nitidum, umbone magno extante sutus concavum, paucispirale, lamina extante suturas definiente. Diam. 045." Tablet 2537 contains the only specimen found, resembling Siphonium, from Tablet 447 is Liocardium apicinum, which should stand as species 709.

Page 314, note * (et seq.), for "Inflatulum" read "Mioceras."

Page 359, line 18, for "regular" read "irregular."



## H.

## DESCRIPTIONS

OF

NEW SPECIES AND VARIETIES OF CHITONIDÆ AND ACMÆIDÆ,

FROM

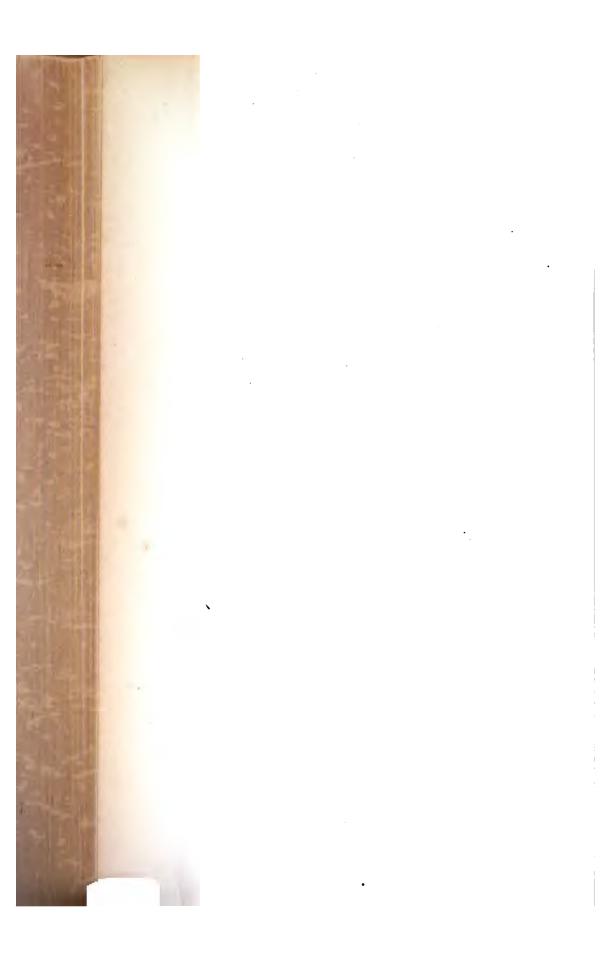
THE PANAMA COLLECTION OF THE LATE PROF. C. B. ADAMS.

BY

PHILIP P. CARPENTER, B. A., PH. D.

From the Proceedings of the Zoölogical Society of London, pp. 274-277, March 14, 1865.

(263)



DESCRIPTIONS OF NEW SPECIES AND VARIETIES OF CHITONIDA AND ACMEIDE, FROM THE PANAMA COLLECTION OF THE LATE PROF. C. B. ADAMS. By PHILIP P. CARPENTER, B.A., PH.D.

#### LEPIDOPLEURUS ADAMSII.

L. t. "L. dispari" simili; pallide rufo-fusca, colore intensiore irregulariter strigata seu maculata; sæpius maculis albidis regione diagonali ornata; jugo vix acuto; arcis centralibus et valvis terminalibus conspicue granulosis; areis lateralibus irregulariter verrucosis, verrucis plerumque lobatis; mucrone antico, vix conspicuo: intus, valvis centralibus uni-, terminalibus viii.-x.-fissis; subgrundis parvis, dentibus acutis; suturis medianis postice rectis, antice laminas haud attingentibus, sinu planato, latissimo: limbo pallii imbricatim squamoso.

Long. 6, lat. 3 poll.; div. 110°.

Variat verrucis minus expressis, simplicioribus. = Chiton dispar, C. B. Ad. no. 373, par.

= Lophyrus adamsii, P. Z. S., 1863, p. 24. Unfortunately for those who do not like to remove the non-testaceous portion from their Chitons, as they do from their other shells, the mantle-margin by no means affords a safe clue to the structure of the valves. Among the species of the genus Ischnochiton, Gray,

(=Lepidopleurus, Add.,) known by the sharp incisor-teeth lying within a projecting lip, there are three types of mantle-margin, which may be conveniently separated as subgenera, to aid in the difficult task of describing and identifying species. The typical forms, for which the name Ischnochiton should be retained, have the scales somewhat chaffy, and very finely striated. I. magdalensis and I. sanguineus well represent the group. But another series have the mantle-scales imbricate and strong, as in Chiton, Gray, (=Lo-phyrus, Add.,) from which they cannot be distinguished without dissection. For this Messrs. Adams's name Lepidopleurus may be retained in a restricted sense. It is uncertain what Risso's original genus was meant to include: his diagnosis applies to all Chitons with distinct side-areas and scaly margins.

A third group, separated by Dr. Gray in his 'Guide,' p. 182, as having the "mantle-scales minute, granular," has been named Tra-

chydermon: it abounds in the Californian region.

The specimens of L. adamsii were found among the duplicates named Chiton dispar by the Professor; one was attached to Discina cumingii.

#### LEPIDOPLEURUS TENUISCULPTUS.

L. t. "L. adamsii" simili; olivacea, colore pallido seu intensiore minute variegata; tota superficie minute granulosa; areus lateralibus vix definitis; suturis plerumque albido maculatis; mucrone antico, satis conspicuo, parte postica concava: intus, ut in "L. adamsii" formata.

Variat: t. pallidore, ad jugum rufo-tincta. = Chiton dispar, C. B. Ad. no. 373, pars.

The outside of this shell so much resembles the young of Chitor. (Lophyrus) stokesii, that specimens may have been distributed under that name. Very few individuals were found.

#### ISCHNOCHITON ELENENSIS (diagn. auct.).

Extus areis centralibus clathris parallelis circ. xx. decussatis, ar. lat. costis ii., validioribus, tumidis, tuberculosis: intus marginibus suturalibus posticis reflexis, tuberculatis, sinu ad jugum parvo; laminis insertionis unifissis, ad laminas suturales anticas junctis, sinu lutissimo. Valva antica extus costis xii., haud validis; intus fissuris x., dentibus acutis, subgrunda parva. Valva postica mucrone subpostico, depresso; parte postica expansa, concava, costis circ. xi. subobsoletis; intus lamina insertionis circ. ix.-fissa, dentibus curtis, subgrunda parva, intus callosa.

The central valves in this species are normal; but the posterior valve offers a transition towards *Callochiton*, the outside being concave posteriorly, the insertion-teeth short and the eaves callous.

#### Ischnochiton (? var.) expressus.

I. t. "I. elenensi" simili, sed carnea; areis centr. clathris x.,
266

distantibus, crebre decustatis, jugo acuto; ar. lat. costis ii., validissimis, angustis, tuberculis angustis: intus marginibus suturalibus posticis planatis, haud tuberculosis, haud sinuatis; lam. insert. ut antea, sinu angusto, ad jugum angulato. Valva antica costis x., validis, angustis: intus ut antea, sed fissuris viii. Valva postica mucrone postico, planato; parte postica expansa, haud concava, costis circ. vii. validissimis: intus lumina circ. vii.-fissa, subgrunda planata.

With a strong general resemblance to *I. elenensis*, the differences in detail in the only two specimens examined, as above stated, appear of specific importance. If only varietal, it is equally important to notice how much change is tolerated by the habits of the animal. It may be the shell called *Chiton clathratus* by Prof. Adams, of which there were no duplicates to compare. It offers a still more marked transition to *Callochiton*, the margin of the posterior valve being somewhat pectinated by the great projection of the ribs.

#### "CALLOCHITON" PULCHELLUS: diagn. auct.

Extus areis centr. lineis interdum parallelis, interdum radiantibus, rugose scrobiculatis; ar. lat. costis ii., validissimis, imbricato-nodosis: valva antica costis similibus circ. ix.: v. post. area centrali lata; mucrone subpostico, planato; parte postica costis vii. similibus, medianis curtissimis, excurvatis: pallio squamulis minutis imbricatis. Intus v. ant. subgrunda (ut in Ischnochitone) munita, sed a costis pectinata; dentibus acutis, intus linea undulata secundum costas instructa, extus concavis, parte convexu costarum incisis: v. medianis similiter pectinatis, laminis secundum costas diag. uniscissis: laminis suturalibus medio continuis, late sinuatis; suturis posticis a sculptura externa granulatis: v. post. vii.-lobata, marginibus planatis, laminis dense compressis incrassatis; dentibus obtusissimis, appressis, haud extantibus, subobsoletis, extrorsum planatis, ut in v. ant. sissis; interdum sesuris quoque in partibus concavis.

As I have seen no published diagnosis of the very peculiar type of insertion-plates observed in this species, which has hitherto been too rare to allow working naturalists an opportunity of dissection, I have given a minute description. The plates of insertion, as well as the exterior eaves, are scalloped by the strong ribs, and alternate with them. In the posterior valve the eaves are flattened outwards, in closely appressed layers, the blunt, ill-developed insertion-teeth lying flat upon them. The valves easily separate from the mantle, when immersed in water. Outside, the species is easily recognized by the two strong ribs of the diagonal areas, the central pitted in somewhat branching rows, and the ribs on the curiously flattened posterior valve resembling a clenched fist.

ACMEA (? FLOCCATA, VAI.) FILOSA.

A. t. "A. mesoleucæ" forma et indole simili; sed sculptura multo

#### DR. P. P. CARPENTER ON CHITONIDE AND ACMEIDE.

tenuiore; t. jun. lævi; dein kirulis delicatulis, acutis, haud granulosis, valde distantibus, interdum obsolctis, filosa; unterstitiis latis, lævibus; tenui, planata, ovali, subdiaphana; nugrofusco, corneo radiatim striyata, seu varie maculata: untus livida seu albida, coloribus externis transeuntibus; limbo lato, acuto.

Long. .7, lat. .56, alt. .12.

= Lottia? patina, C. B. Ad. Pan. Shells, no. 367.

Hab. Panama (C. B. Adams).

There is no described west-tropical species to which these shells can be affiliated, unless they prove to be a very delicate variety of A. foccata, Rve. Unfortunately the Panama limpets have never been collected in sufficient numbers to make out their specific limits satisfactorily. The names here given may stand as species or varieties, according to future elucidation. In shape and texture, but not in colour or sculpture, these shells resemble A. fascicularis; in the latter respects, A. strigatella. They were named "tenera, Ad." by Dr. Dohrn, but are sufficiently distinct from that West-Indian species.

#### ACMÆA (? FLOCCATA, VAT.) SUBROTUNDATA.

A. t. "A. var. filosæ" simili, sed subrotundata, magis elevata, vertice subcentrali; colore intensiore, lineis corneis crebrioribus, angustis; t. jun. sæpe pallidiore, radiis duobus postice triangulata: intus callo livido, tenuiore.

Long. .53, lat. .45, alt. .15.

= Lottia, sp. ind. a, C. B. Ad. Pan. Shells. no. 368.

Hab. Panama (C. B. Adams ).

#### Acmæa (? var.) vernicosa.

A. t. parva, subrotundata, depresso-conica, apice ad duas quintas partes sito; albido-viridi, strigis paucis rufo-fuscis hic et illic ornata, sæpius radiis duobus candidis, postice triangulata; extus lineis acutis radiantibus, valle distantibus, sæpe obsoletis vix sculpta: intus livida, callosa, sæpius spathula candida ornata; basi subplanata, limbo angusto.

Long. 3, lat. 24, alt. 1.

Hab. Panama (Jewett, C. B. Adams).

=Lottia, sp. ind. b, C. B. Ad. Pan. Shells, no. 369.

Had this form been brought from the China Seas, it might have been taken for the young of A. biradiata, Rve. From its solidity, however, its rough exterior, and its callous interior, it appears to be adult. It is barely possible that it may develope into A. vespertina. It differs from the young of A. subrotundata in being much thicker and less spotted with the green tint.

## DIAGNOSES

OF

# NEW SPECIES OF MOLLUSKS,

FROM

THE WEST TROPICAL REGION OF NORTH AMERICA,

PRINCIPALLY COLLECTED BY THE REV. J. ROWELL, OF SAN FRANCISCO

BY

PHILIP P. CARPENTER, B. A., Ph. D.

From the Proceedings of the Zoölogical Society of London, pp. 278-282, March 14, 1865.

(269)



DIAGNOSES OF NEW SPECIES OF MOLLUSKS, FROM THE WEST TROPICAL REGION OF NORTH AMERICA, PRINCIPALLY COLLECTED BY THE REV. J. ROWELL, OF SAN FRANCISCO. BY PHILIP P. CARPENTER, B.A., Ph.D.

Of the new species quoted in the "Supplementary Report on the Present State of our Knowledge of the Mollusca of the West Coast of North America," published in the Transactions of the British As sociation, 1863, pp. 517-686, the principal portion (namely, those dredged by Dr. J. G. Cooper, Zoologist to the Californian State Geological Survey) are described in the 'Proceedings of the California Acad. Nat. Sciences,' for 1864-65; those dredged in Puget Sound, during the U.S. North Pacific Boundary Survey, by the late Dr. Kennerley, are described in the 'Journal of the Philadelphia Acad. Nat. Sc.' for the present year. The species obtained by the naturalists of the British Survey are described in three papers by Dr. Baird and myself, P. Z. S. 1863-65. The new species sent by Mr. J. Xantus from Cape St. Lucas, and by Mr. J. G. Swan from Neeah Bay, appear in the 'Ann. and Mag. Nat. Hist.,' 1864-65. In the same Journal are described the new species which I found in Col. Jewett's collection. Those sent to Dr. Gould from the same collection had been previously analyzed in the 'Proc. Zool. Soc.' 1856. The above are the principal sources of fresh knowledge; but a number of species from the Californian province, which do not range under any of these heads, will be found in the 'Journal de Conchyliologie' for the current year.

In separate papers communicated to the Zoological Society are the diagnoses of additional species from Prof. Adams's Panama and from M. Reigen's Mazatlan collections. The remaining species, from the tropical province, are embodied in the present paper. The types (unless otherwise stated) are in the Museum of the Smithsonian Institution.

#### (TELLINA) ANGULUS DECUMBENS.

A. t. tenui, subplanata, alba seu rosacea; lævi, striolis incrementi insculpta; epidermide pallide straminea induta; antice et ventraliter valde producta; postice truncata, angulata; umbonibus acutioribus, vix prominentibus; marginibus dorsalibus postico recto, antico ad angulum parum excurvato, antico et ventrali valde et regulariter excurvatis; parte postica v. dextr. subito angulata, v. sinistr. parum sinuata; nymphis angustis, elongatis, cartilagine omnino externo: dent. card. mo nimis; dent. lat. v. dextr. antico satis conspicuo, postico obsoleto; v. sinistr. nullis; cicatr. adduct. posticis subrhomboideis, anticis valde elongatis, angustis; sinu pallii maximo, subtriangulari, usque ad cicatricem alteram utraque valva porrecta.

Long. 1.7, lat. 1.2, alt. .68 poll. Hab. Panama (teste Rowell, Pease).

This shell was affiliated by Mr. Hanley to the W. African T.

nymphalis, but differs in the internal scars. Externally it resem-T. dombeyi, Lam. (= Scrobicularia producta, Cpr. P. Z. S. 1855, p. 230), but is easily recognized by the strictly Tellinoid ligament and anterior lateral tooth, by the posterior portion being pinched instead of waved, and by the junction of the pallial sinus with the opposite scar. By the same characters it is distinguished from T. tersa, Gld., which closely resembles S. dombeyi, var., in Mus. Cum. Like many other Tellens, it has a white and a pink variety. The name was printed by an oversight in Brit. Assoc. Rep. 1863, p. 669, as A. amplectans; but as it was unaccompanied by a diagnosis, and does not describe the shell, no confusion will arise from reverting to the name first given.

#### LUCINA UNDATA.

L. t. convexa, tenuiore, albida; tota superficie lirulis concentricis creberrimis, compressis, haud acutis ornata, interstitiis minimis; parte ventrali costis radiantibus iii., obtusis, latis, validissimis, interstitiis parvis; lunula maxima, a sulco bene definita, sub umbonibus incurvatis fossa alta minuta indentata; parte postica alata; margine a costis valde undato, minute crenulato; ligamento quasi interno: intus dent. card. parvis, a fossa lunulari intortis; lat. curtis, obtusis; cicatr. adduct. antica irregulari, postica subovuli; linea palliari prope marginem sita, undata.

Long. '45, lat. '44, alt. '3.

Hab. Gulf of California (teste Rowell).

The outline somewhat resembles Cryptodon; but the aspect is more that of Verticordia, while the minute subumbonal pit is suggestive of Opis. The shell is sexpartite; the portion between the anterior rib and the lunule resembles a fourth rib, while the projecting lunule and the posterior wing are quite distinct from the body of the shell. The specimen sent by Mr. Rowell to the Smithsonian Institution was completely smashed. The diagnosis is written from a perfect shell sent by Dr. Newcomb to Mr. Cuming.

#### CALLIOSTOMA (? LIMA, VAT.) ÆQUISCULPTA.

C. t. "C. limæ" simili; sed anfr. planatis, suturis haud distinctis; sculptura regulari; jun. monilibus spiralibus inter se æqualibus; t. adulta majore et minore alternantibus; colore rufescente, granulis interdum rufo-fusco maculatis.

Hab. Acapulco (Newberry).

Dr. Newberry's specimens agree in most essential respects with "Trochus lima, Phil.," in C. B. Ad. Pan. Shells, no. 276, which appears identical with the shells marked "Ziziphinus antonii, Koch, N. Zealand," in Mus. Cuming. The Acapulcan shells are quite flat, while those from Panama are for the most part shouldered as in C. eximium, Rve. (= C. versicolor, Mke. Maz. Cat. no. 289). However, there is no little variation among the Professor's specimens of C. lima, and some are so slightly shouldered that the Acapulcan form may be a local variety.

#### NARICA INSCULPTA.

N. t. "N. apertæ" simili, sed magis compacta; paullum angustiore, umbilico tamen majore; lineis spiralibus circ. xxvi. distantibus insculptis cincta, quarum x. in anfr. penult. monstrantur; postice lineis incrementi vix conspicuis.

Long. 3, long. spir. 08, lat. 28; div. 100°. Hab. Acapulco, on Ostrea iridescens, Rowell.

The Cape St. Lucas species (vide Ann. Nat. Hist. 1864, xiii. p. 476) has the sculpture in irregularly raised lirulæ, while this has minute grooves chiselled out of a smooth surface. It appears that the San Pranciscans import the huge tropical oysters in large quantities, their own species having the coppery flavour which Americans dis-like in the British species. From the outside of the valves, Mr. Rowell obtained this and many other interesting species.

#### DRILLIA EBURNEA.

D. t. turrita, carneo-albida, tenuiore, lævi, maxime nitente; mar-ginibus spiræ rectis; anfr. nucl.? . . . [decollatis]; norm. circ. ix., poetice planatie, supra suturas appressis, medio satis escurvatis; hic et illic rugis radiantibus, obsoletis, irregula-ribus execulpta; basi prolongata, canali conspicuo, aperto; sinu postico minore, in sulco lato, haud definito, spiram ascendente eito; labro acuto; labio indistincto; columella planata.

Long. 1.3, long. spir. .8, lat. .45; div. 30°.

Hab. Near Gulf of California (teste Rowell).

Easily recognized by its smooth glossy aspect and French-white colour; the notch lying along a broad spiral channel, which throws the junction of the whorl as it were up the suture.

#### MANGELIA ALBULAQUEATA.

M. t. solida, turrita, alba, rudi, marginibus spiras rectis; anfr. nucl.? . . . [decollatis]; norm. circ. ix. subrotundatis, costis circ. xi.-xv., declivibus, satis angustis, postice obsoletis, lineis subregularibus spiram ascendentibus; lirulis spiralibus anticis crebris, postice obsoletis; basi elongata; labro? . . . ; labio calloso; sinu postico majore, suturam attingente. Long. 88, long. spir. 55, lat. 34; div. 30°. Hab. Panama (teste Rowell).

Described from an imperfect and worn specimen, but easily recognized by its ivory-white colour, and ribs in slanting rows, as though the creature were roofed with white tiles. It was erroneously quoted in the Brit. Assoc. Rep. 1863, p. 669, as a Drillia.

#### EULIMA PALCATA.

18

E. t. valde tereti, valde curvata, alba, politissima, solidtore, marginibus spiræ meniscoideis; anfr. nuel.? . . . [detritis]; norm. circ. x., planatis, lente augentibus; axi hamala, suturis indistinctis; basi elongata, haud tereti; apertura pyrijormi, antice latiore; labro acuto; labio tenui, appresso.

Long. 31, long. spir. 21, lat. 09; div. 12°. Hab. Acapulco, on Ostrea iridescens, Rowell.

The spire outlines are scythe-shaped. It is much larger and more solid than L. distorta and (?var.) yod.

#### CERITHIOPSIS INTERCALARIS.

C. t. valde elonyata, rufo-fusca, marginibus spiræ rectis, suturi impressis; anfr. nucl. iii. +? . . . (decollatis), radiatim distanter liratis; norm. x., planatis; costis radiantibus primum xii., dein circ. xxii., angustis, haud extantibus, ad peripheriam continuis, interstitiis quadratis; carinis spiralibus primum ii. nodulosis, dein alteris ii. minoribus inter eas intercalantibus; carina postica suturali haud nodulosa, secunda valde nodulosa, tertia intercalante æquante sed haud nodosa, quarta antica valde nodosa, quinta circa peripheriam, primæ et tertiæ simili, haud nodosa, alteraque contigua, minima, inter quas sutura gyrat; basi concava, lævi; columella valde contorta; canali brevi, aperto; labro? . . . *

Hab. Guacomayo.

This beautiful species comes nearest to C. bimarginata, C. B. Ad., of which, indeed, the type does not agree with the diagnosis so well as does this specimen. It differs in having other spiral ribs intercalating between the two principal ones, and in the radiating sculpture being continued to the periphery. One specimen only was found in the shell-washings, not perfect at the mouth.

#### COLUMBELLA HUMEROSA.

C. t. parva, turrita, alba, linea seu maculorum serie fusca interdum spiram ascendente; marginibus spiræ parum excurvatis; anfr. nucl.? . . . [detritis]; norm. vi., convexis, postice tumentibus, suturis valde impressis; costis radiantibus vii.-viii., distantibus, validissimis, rotundatis; interstitiis late undatis; lirulis validis spiralibus extantibus. interstitiis eas æquantibus, costas et harum interstitia transeuntibus; basi angusta; labro rix raricoso, postice emarginato, intus solidiore, dentibus circ. iv. munitis; apertura late undata, compacta.

Long. 26, long. spir. 15, lat. 13; div. 38°. Hab. Acapulco, on Ostrea iridescens, Rowell.

The sculpture resembles that of Rhizocheilus, and the tall spire that of Anachis; yet it appears to belong to the restricted typical genus.

#### MURICIDEA DUBIA, VAI. SQUAMULATA.

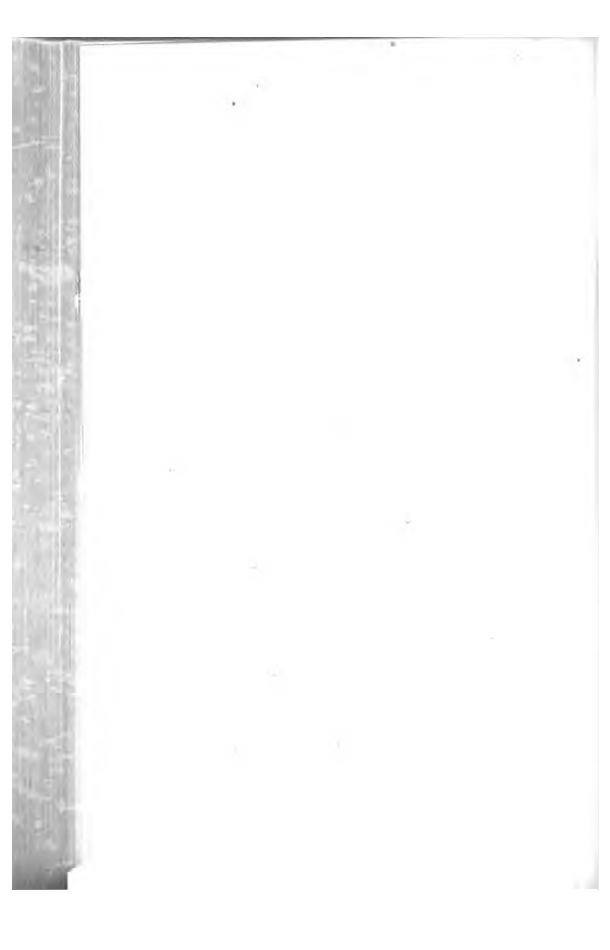
Variat t. omnino albida; sculptura tenuiore; spira elevata; tota superficie minute squamulata, squamulis imbricatis.

Hab. Cape St. Lucas (Xantus).

The opercula in the beautiful specimens sent by Mr. Pease are

^{*} I forgot to measure the specimen before returning it to the Smithsonian Inst.; but it is about the size of C. assimilata.

typically Muricoid. The essential features are those of *M. dubia*; the pale colour and delicate sculpture and imbrication may arise from a deep-water station, as is seen in similar European shells. Mr. Cuming, however, regards it as distinct.



## DIAGNOSES

01

# NEW FORMS OF MOLLUSCA,

FROM

THE WEST COAST OF NORTH AMERICA,

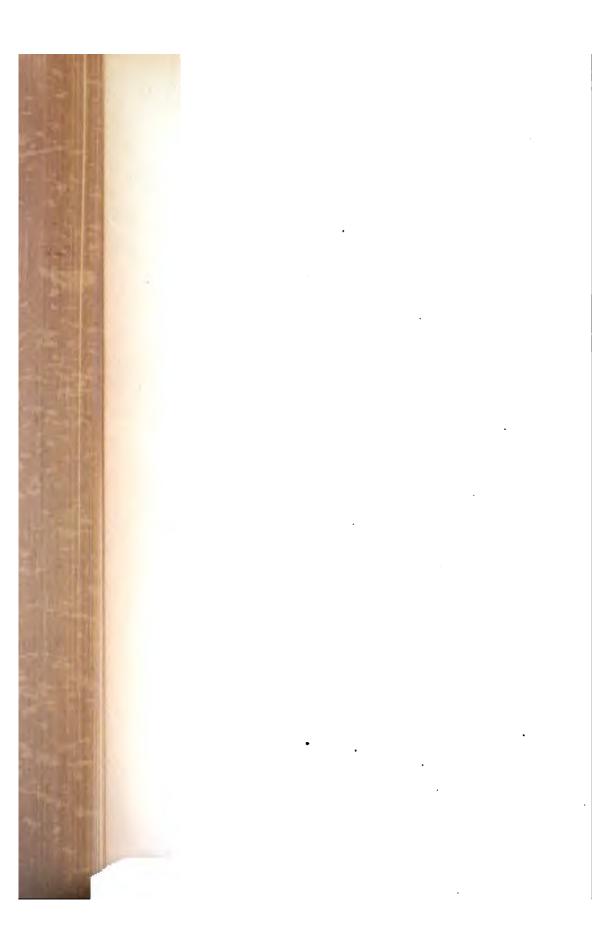
FIRST COLLECTED BY COL. E. JEWETT.

BY

PHILIP P. CARPENTER, B. A., PH. D.

From the Annals and Magazine of Natural History. Third Series, Vol. XV., pp. 177-182 (Nos. 373-386), March, 1865. Ibid., pp. 394-899 (Mangelia variegata to end), May, 1865.

(277)



#### DIAGNOSES

## NEW FORMS OF MOLLUSCA

FROM

THE WEST COAST OF NORTH AMERICA,

FIRST COLLECTED BY COL E. JEWETT.

BY

· PHILIP P. CARPENTER, B.A., PH.D.

An account of Col. Jewett's shells will be found in the British Association Reports for 1856 (pp. 226-231) and 1863 (pp. 534-539). The exact localities are often uncertain; but many of them have been fixed by subsequent explorers. Being generally worn beach-specimens, the diagnoses have been written (whereever practicable) from perfect shells, and especially from the beautiful series dredged by Dr. J. G. Cooper, in the Californian State Survey. The types belong to Mrs. Boyce, of Utica, N. Y., and are at present in my keeping. The numbers, in the species from the temperate fauna, refer to the table in the British Association Report for 1863, pp. 636-664.

37 b. Solen (? sicarius, var.) rosaceus.

S. testa S. sicario simili, sed minore; multo angustiore, elongata, recta, extus et intus rosacea; epidermide tenui, valde nitente. Long. '27, lat. '5, alt. '32 poll.

Hab. Sta. Barbara (Jewett); S. Pedro (Cooper).

74. Subgenus Amiantis*.

Callista: dente postico utraque valva ruguloso.

Type: Amiantis callosa, = Cytherea callosa, Conr., = Dosinia

* Th. αμίαντος, ό καὶ ή, unpolluted.

callosa, Brit. Assoc. Rep. 1857 (from fragments): non Venus cal-

losa (as of Conr.), Sow., Rve., Desh.

Hab. Sta. Barbara (Nuttall, Jewett); S. Pedro (Cooper); Cape

St. Lucas (Xantus).

This section differs from the typical Callistæ as does Mercenaria from Venus. Whether the other peculiarities of the species (redescribed by Reeve as Cytherea nobilis) are coordinate, cannot yet be stated, as it stands alone. In sculpture and colour it resembles Dosinia; in its ponderous growth, Pachydesma.

### 110. Lazaria subquadrata.

L. testa extus Carditæ variegatæ jun. simili ; pallida, castaneo tincta; subquadrata, antice truncata, subregulariter ventricosa, dorsaliter tumida; costis radiantibus circ. xiv.-xvi., tumidis, nodosis, diagonalibus majoribus; interstitiis plus minusve insculptis: intus, valva dextra dente cardinali triangulari, inter duas fossas sito, haud elongato; dent. lat. a cardine separatis, ant. extante, post. obsoleto, calloso: v. sinistrali dent. card. ii. angustis, subæqualibus, radiantibus; lat. ant. et post. extantibus: cicatr. adduct. subrotun-Long. 37, lat. 25, alt. 34. datis.

Hab. Sta. Barbara (Jewett); Monterey, and along the coast to S. Pedro (State Coll. no. 403) (Couper).

The outside of this remarkable little species is typically Carditoid; the hinge is intermediate between Lazaria and Cypricardia.

#### 132. Modiola fornicata.

M. testa curta, lævi, latjore, maxime fornicata; pallide carnea. epidermide rufo-fusca, rugis incrementi et incrustatione densissime pilosa induta; umbonibus maximis, spiralibus, antice torsis, per tres quadrantes totæ latitudinis devectis; area ligamentali curtissima, arcuata; margine dorsali antice nullo, postice longo, arcuato; margine ventrali recto, vix propter byssum hiante; postico lato, antico angusto; altitudine dorsaliter valde elevata, ventraliter plane declivi, cuneiformi; umbonibus trans marginem anticum per sextantem totius longitudinis excurrentibus: intus, sub umbonibus excavata; eicatr. adduct. ant. ventraliter sita. Long. 1.4, lat. '76, alt. 95.

Hab. Sta. Barbara (Jewett); Monterey (Taylor).

### 160. Pecten (? var.) æquisulcatus.

F. testa P. ventricoso simili, sed tenuiore, minus ventricosa; costis piuribus angustioribus xx.-xxi.; interstitiis (præcipue valva superiore) fere æqualibus; auriculis magis productis, acutis; sinv serrato: testa jun interstitiis alte insculptis, laminis concentricia

erebris, vix extantibus, interstitia, costas auriculasque transeuntibus. Long. 3.2, lat. 3.35, alt. 1.5.

Hab. Sta. Barbara (Jewett); S. Diego (Cassidy, Newberry, Cooper).

Intermediate between the tropical P. ventricosus and the Atlantic P. irradians.

#### 161. l'ecten saucicostatus.

P. testa subconvexa, vix sequilaterali; castaneo seu rubido seu electrico parta; costis xi.-xv., validis, angustis, rotundatis; interstiriis multo latioribus, subpianatis; tota superficie minutissime concentrice striata; auriculis latis, haud sequalibus, lirulis circ. vi. ornatis; sinu paucidentato: intus pallidiore, linea cardinis costata, ad suturas auricularum tuberculosa; fossa ligamentali curta, transversim lata. Long. 1.7, lat. 1.84, alt. .56.

Hab. Sta. Barbara (Jewett); Sta. Barbara Island (Cooper).

## Pecten (? var.) squarrosus. (Page 536.)

P. testa orbiculari, equilaterali, rubida, albido maculata; valva dextra convexa; costis xviii., equalibus, testa jun. approximatis, testa adulta interstitiis equalibus; costis et interstitiis regulariter undatis, striis crebris squamosis radiantibus ubique ornata; auriculis magnis, latissimis, subequalibus; antica anguste fissata, serrata, postica sinuata; auriculis ambabus et regione contigua scabrose striatis: intus alba, linea cardinali alte sulcata. Long. 1.82, lat. 1.79, alt. .9.

Hab. "Sta. Barbara," teste Jewett.

Resembles a shell in Mus. Cuming., marked "exasperatus, var.," but does not agree with the diagnosis of that species. All Col. Jewett's valves were dextral. The locality needs confirmation.

#### 183. Volvula cylindrica.

V. testa cyliudracea, alba, nitente, striis spiralibus distantibus cincta; medio planato, marginibus fere parallelis; antice satis effusa, postice subito angustata; canali brevissimo; labro acuto; labio indistincto; plica columellari parva, valde declivi. Long. 17, lat. 07.

Hab. Sta. Barbara (Jewett).

#### 265. Phasianella (? compta, var.) punctulata.

P. testa P. comptæ simili, sed elatiore; suturis impressis; anfractibus tumentibus; omnino minutissime fusco punctata; columella lacupata. Long. 24, long. spir. 12, lat. 14, div. 50°.

Hab. S. Diego (Jewett).

## Dr. P. P. Carpenter on new Forms of Mollusca

### 265 b. Phasianella (? compta, var.) pulloides.

P. testa P. pullo simillima; solida, compacta, spira breviore; suturis distinctis. Long. '2, long. spir. '1, lat. '13, div. 55°.

Hab. Sta. Barbara (Jewett); Monterey, 20 fathoms (State Coll. no. 353). Smaller var., 8-10 fathoms, Catalina Island (Cooper).

265 c. Phasianella (? compta, var.) elatior.

P. testa perparva; spira elongata, ut in P. pullo picta; anfractibus subplanatis; suturis haud impressis; columella haud lacunata. Long. 19, long. spir. 12, lat. 11, div. 40°.

Hab. Sta. Barbara (Jewett).

4

P. compta, with a large proportion of the small shells of the genus, is included under P. pullus in Mr. Reeve's monograph. In so difficult a tribe, it is judged better to name the distinct forms, and those from separated localities, until more is known.

#### 276. Trochiscus convexus.

T. testa parva, subelevata, purpureo-fusca, tenuiter sculpta; anfr. nucl. ? sinistralibus, vertice quasi decollato; norm. iv., convexis, suturis impressis; obtusissime bicarinatis, striolis confertissimis, minimis, subobsoletis cinctis; umbilico majore, costis duabus cincto, quarum interior acuta, exterior rotundata, crenata; apertura circulari. Long. 15, long. spir. 06, lat. 15, div. 90°.

Hab. Monterey (Jewett).

The nuclear whorls in this unique little shell and in the typical species appear sinistral, as in Phoridæ and Solariadæ. The operculum also resembles that of Solarium rather than of Trochus. The genus may prove to belong to the Proboscidifers, notwithstanding its nacreous texture.

### .317. Hipponyx tumens.

H. testa normaliter fornicata, rotundata, albida; epidermide rugulosa, interstitiis pilulosa; vertice nucleoso nautiloideo, lævi, parum tumente, apice celato, interdum persistente; dein rapidissime augente, expansa, undique regulariter arcuata; liris acutis, subelevatis, distantibus, spiralibus, aliis intercalantibus; lineis incrementi minoribus decussantibus; margine acuto; apertura plerumque rotundata: cicatrice musculari a margine parum remota, regione capitis valde interrupta. Long. 7, lat. 46, alt. 33, div. 90°.

Hab. Sta. Barbara (Jewett); S. Pedro (Cooper).

="H. ?subrufa" + " Capulus, 213," Brit. Assoc. Rep. 1857, p. 230.

#### 329 b. Bittium (? var.) esuriens.

B. testa B. filoso simili, sed multo minore, graciliore, interdum valdattenuata; sculptura testæ jun. ut in B. filoso, testæ adultæ sub obsoleta; interstitiis haud insculptis. Long. 3, long. spir. 21 lat. 11, div. 25°.

Hab. Sta. Barbara (Jewett); Neeah Bay (Swan); Monterey (Cooper).

334. Bittium fastigiatum.

B. testa parva, gracili, pallide rufo-cinerea, marginibus spiræ vix excurvatis; anfr. nucl. iii., lævibus, tumidis, apice acuto; norm. ix., planatis, suturis alte impressis; anfr. primis iii. carinatis, postea costis radiantibus circ. xiii., obtusis, satis extantibus, ad suturas interruptis, interstitiis undatis, liris spiralibus iv. in spira se monstrantibus, costas undatim superantibus, quarum antica in testa jun. plerumque extat; anfr. ultimo parum contracto, basi elongata, liris spiralibus vi. contiguis ornata; apertura gibbosa; labro acuto, interdum varicoso, antice angulatim emarginato; labio tenui. Long. 25, long. spir. 19, lat. 09, div. 20°.

Hab. Sta. Barbara (Jewett).

#### Genus Amphithalamus*.

Testa Rissoidea, nucleo magno; apertura labio producto, labro subpostice juncto, subito in adulta contracto.

## 355. Amphithalamus inclusus.

A. testa minuta, lata, solidiore, pallide rufo-fusca; vertice mamillato; anfr. nucl. uno et dimidio, quoad magnitudinem permagnis, minutissime et confertissime spiraliter et radiatim striolatis; anfr. norm. iii., lævibus, subplanatis, suturis impressis; basi subangulata; costa peripherica rotundata, haud extaute, interdum in spira se monstrante; costa altera circa regionem pseudo-umbilicarem; labro acuto, haud contracto: labio testa adolescente normali, dein a pariete separata, sinum posticum suturam versus formante, t. adulta valde separata, regionem quasi umbilicarem magnam formante; ad labrum subito fere perpendiculariter, subpostice juncto: operculc tenuissimo. Long. '04, long. spir. '02, lat. '03, div. 60°.

Hab. Sta. Barbara (Jewett); S. Diego (Cooper).

This very remarkable little shell bears the same relation to Rissoa that Stoastoma does to Helicina. The peritreme resembles a figure 6 inverted, as on the face of the type. In the disproportionate size of the nuclear whorls it resembles Vitrinella.

#### 373. Drillia mæsta.

D. testa acuminata, lævi, dense olivaceo-fusca, epidermide lævi adhærente induta; anfr. nucleosis?...(decollatis); norm. viii., parum

* Th. ἀμφὶ, θάλαμος, having a chamber on both sides.

excurvatis, suturis parum distinctis; testa adolescente costis radiantibus circ. x., subobsoletis, elongatis, arcuatis, sinum versus interruptis, postice nodosis; anfr. ult. sculptura nulla; apertura elongata; canali brevi, aperto; columella recta; labio tenui; labro acuto, suturam versus sinuato, sinu parvo, expanso; operculo normali. Long. 1·1, long. spir. ·65, lat. ·36, div. 27°.

Hab. Sta. Barbara (Jewett); S. Pedro (Cooper).

## . 386. Mitromorpha filosa.

M. testa parva, solidiore, atro-purpurea, subconiformi, antice et postice subæqualiter tereti; anfr. nucl. ii., albis, lævibus, apice mamillato; norm. iv., planatis, suturis haud distinctis; omnino æqualiter spiraliter lirulata; lirulis acutioribus, in spira iv., anfr. ult. circ. xx., interstitiis majoribus; apertura lineata; labro parum inflexo, rotundato, postice vix sinuato, intus circ. xii.-dentato; labio inconspicuo; columella arcuatim truncata. Long. ·26, long. spir. ·1, lat. ·12, div. 45°.

Hab. Sta. Barbara (Jewett); Lower California (teste Trick, in Mus. Cuming.).

=? Daphnelta filosa, Brit. Assoc. Rep. 1863, p. 658, note +.

Mr. A. Adams obtained two similar species from Japan; and as the shells do not rank satisfactorily under any established group, he proposes the above genus for their reception. M. Crosse suggests that Columbella dormitor, Sby., may be congeneric.

### Mangelia variegata.

M. testa valde attenuata, tenui, parva, pallide carnea, rufo-fusco normaliter bizonata, interdum unizonata, seu zonis interruptis; vertice nucleoso conspicuo, anfr. uno et dimidio, apice mamillato; anfr. norm. vi., subrotundatis, suturis valde impressis; costis radiantibus ix., angustis; costulis spiralibus crebris, validioribus, in spira circ. x., costas superantibus; apertura valde elongata; canali brevi, aperto; labro tenui, juxta suturam conspicue arcuato; labio tenui. Long. 31, long. spir. 17, lat. 1 poll., div. 22°. Variat costis crebrioribus, sculptura minus expressa.

Hab. Sta. Barbara (Jewett).

#### Mangelia (? variegata, var.) nitens.

M. testa M. variegatæ simili, sed nitentiore, fascia alba et altera rufo-fusca attingente spiram ascendentibus. Long. 25, long. spir. 15, lat. 08, div. 20°.

Hab. Sta. Barbara (Jewett), rare.

#### Mangelia angulato.

M. testa parva, rufo-purpurea, vix gracili, epidermide tenui fugaci; anfr. nucl. iii., helicoideis, primum lævibus, dein cancellatis, apice

mamillato; anfr. norm. iv., convexis, suturis impressis, in medio spiræ obtusangulatis; costis radiantibus circ. xii., acutioribus; costula spirali circa angulum, inter costas subobsoleta; tota superficie tenuiter spiraliter crebrisulcata, sulculis sub lente seepius bifidis; apertura pyriformi, canali longiore, recto, aperto; labro acuto, postice conspicue sinuato; columella haud contorta; labro obso-Long. 35, long. spir. 18, lat. 13, div. 30°.

Hab. Sta. Barbara (Jewett).

## Myurella simplex.

M. testa rufo-cinerea, minore, minus tereti, epidermide tenui; anfr. xii., planatis; fascia suturali valida, nodosa, tuberculis ovalibus crebris validioribus (anfr. penult. circa xv.) ornata; testa adolescente costulis radiantibus, postea evanescentibus; striolis antice et postice spiralibus, circa peripheriam sæpe obsoletis; basi rotundata; canali brevissimo, alte emarginato; carina supra canalem acuta, columellam plicante; labro acuto, vix undato. Long. 1.03, long. spir. .76, lat. .27, div. 20°. Variat tuberculis subobsoletis.

Hab. Sta. Barbara (Jewett); S. Pedro (Cooper).

#### Odostomia inflata.

O. testa majore, tenui, pallide cinerea, epidermide cinerea induta; vert. nucl. subito immerso; anfr. norm. iv., rapidissime augentibus, subplanatis, suturis impressis; tota superficie minutissime et confertissime spiraliter striolata; umbilico nullo; basi et apertura valde elongatis; labro acuto; labio tenuissimo; plica acuta, transversa, parietem attingente; columella valde arcuata, antice effusa. Long. 26, long. spir. 09, lat. 14, div. 60°.

Variat spira elatiore. Long. 24, long. spir. 11, lat. 13, div. 45°.

Variat quoque striolis subobsoletis.

Hab. Sta. Barbara (Jewett); Farraleone Islands, in cavities, on Haliotis (teste R. D. Darbishire); near San Francisco (Rowell); Neeah Bay (Swan).

#### Chemnitzia crebrifilata.

C. testa satis tereti, subalbida, haud regulari; anfr. nucl. ii., helicoideis, decliviter sitis, margines spiræ parum excurvatos paullum superantibus; norm. viii., quorum primi subrotundati, ultimi vix planati; suturis valde distinctis; cost. rad. circ. xxiv., subrectis, acutioribus, angustis, interdum attingentibus, anfr. ultimo crebrioribus minus expressis, circa basim prolongatam haud subito evanescentibus; lirulis spiralibus, in spira circ. viii., rotundatis, expressis, anfr. ult. supra costas subnodulosis, citca basim crebrioribus; peritremate continuo; columella vix torta, haud plicata; Long. 22, long. spir. 17, lat. 07, div. 18°. labio distincto.

Hab. Sta. Barbara, 1 specimen (Jewett).

## 403 b. Chemnitzia (?torquata, var.) stylina.

C. testa C. torquatæ simili, sed valde teretiore, gracillima, interdum subdiaphana; anfr. nucl. ii., decliviter sitis, margines spiræ fere parallelos vix superantibus; norm. xii., angustis, subplanatis, suturis distinctis; costis radiantibus circ. xxiii., latis, declivibus, testa juniore continuis, adulta fascia haud sculpta suprasuturali separatis; interstitiis parvis, haud sculptis; basi rotundata, haud sculpta; columella parum torta. Long. 32, long. spir. 27, lat. 8, div. 10°.

Hab. Sta. Barbara (Jewett); Monterey (Cooper).

## Chemnitzia Virgo.

C. testa parva, alba, gracili, stylina; anfr. nucl. ii., decliviter sitis, margines spiræ subparallelos haud superantibus; norm. viii., subrotundatis, suturis distinctis; costulis radiantibus circ. xviii., angustis, acutioribus, sæpe attingentibus, circa peripheriam haud subito evanidis, interstitiis subæqualibus alte spiraliter sulcatis, sulcis circ. viii., latera costarum crenulantibus, costas haud superantibus; basi valde rotundata, curta, haud sculpta; axi lacunato; peritremate vix continuo; columella recta. Long. 18, long. spir. 14, lat. 05, div. 12°.

Hab. "Sta. Barbara," 1 specimen (Jewett).

#### Dunkeria laminata.

D. testa satis elevata, rufo-fusca, fasciis pallidioribus interdum cincta; anfr. nucl. ii., helicoideis, valde decliviter sitis, margines spiræ subrectos haud superantibus; norm. viii., subrotundatis, suturis impressis; costis spiralibus rotundatis, in spira iv., aliisque suturalibus vix rotundatis, interstitiis minoribus impressis; super eas laminis radiantibus acutioribus circ. xxx., circa basim rotundatam tenuiter continuis; liris spiralibus basalibus circ. viii., obtusis, columellam versus subflexuosam obsoletis; peritremate continuo; labio appresso. Long. 25, long. spir. 18, lat. 07, div. 20°.

Hab. Sta. Barbara (Jewett); San Diego (Cooper).

This beautiful Fenelloid species may be regarded as the type of the group Dunkeria.

#### Eulima Thersites.

E. testa parva, curtissima, albida, arcuata, valde distorta; marginibus spiræ dextro subrecto, sinistro valde excurvato; anfr. nucl. ?.. (decollatis); norm. vi., lævibus, subplanatis, suturis distinctis; basi valde arcuata; apertura subovali, dextrorsum producta; peritremate continuo, valde calloso; labro sinuato. Long. '21, long. spir. '13, lat. '09, div. 40°.

Hab. Sta. Barbara, 1 specimen (Jewett).

Preeminent for aberration among the distorted Eulimidæ. A second specimen occurred from an uncertain source.

## Opalia bullata.

O. testa minore, alba, subdiaphana, turrita, gracili; marginibus spiræ subrectis; tota superficie minutissime et creberrime spiraliter striolata; vertice nucleoso declivi, celato; dein anfr. ii., globosis, radiatim haud sculptis; dein v. normalibus, pianatis, suturis vix impressis; lirulis radiantibus circ. xxvi., haud nisi in anfr. primis expressis, circa basim irregulariter rotundatam ad axim continuis; serie bullularum suturalium anfr. primis e lirulis extantibus formata, postea lirulis haud convenientibus, anfr. penult. circ. xvii., planatis, super suturas parieti appressis, interstitiis haud infossis; basi subangulata, haud costata; apertura subovali, sinistrorsum subplanata; peritremate continuo, calloso; labro haud sinuato. Long. 3, long. spir. 21, lat. 09, div. 20°.

Hab. Sta. Barbara, one specimen (Jewett).

#### 422. Cerithiopsis purpurea.

C. testa compacta, haud gracili, marginibus spiræ parum excurvatis; purpurea seu fusco-purpurea, circa peripheriam pallidiore; anfr. nucl.? ii., lævibus; norm. vii., planatis, suturis impressis; scriebus iii. nodulorum minorum supra costulas spirales minores, ad intersectiones costularum radiantium circ. xxiii., lineis fere rectis, ad suturas interruptis, spiram ascendentium sitis; interstitiis impressis, quadratis; costulis suturalibus ii. haud nodulosis; basi rotundata, antice lirulis paucis expressis inter eas et costulas suturales vix sculpta; apertura subquadrata; columella torta, emarginata. Long. '29, long. spir. '19, lat. '1, div. 20°.

Hab. Sta. Barbara (Jewett); Monterey, San Diego (Cooper).

### 423. Cerithiopsis fortior.

C. testa C. purpureæ simili, sed sculptura multo fortiore, basi pallida; seriebus nodulorum spiralibus testa adolescente ii., postea iii.; costis radiantibus circ. xiii., interstitiis magnis; costis suturalibus validis, subnodosis; costa basali valida. Long. 3, long. spir. 2, lat. 11, div. 26°.

Hab. Sta. Barbara, 1 specimen (Jewett).

## 439. Marginella subtrigona.

M. testa M. Jewettii simili, sed multo curtiore, latiore; antice valde angustata, postice valde tumente; labro postice minus prolongato; pheis iv., validioribus, parietali una. Long. 14, long. spir. 01, lat. 11, div. 130°.

Hab. Sta. Barbara (Jewett).

#### 440. Marginella regularis.

M. testa M. Jewettii simili, sed multo minore, paullum angustiore; tenui, nitidissima, crystallina, omnino diaphana; labio magis calloso. Long. 13, long. spir. 01, lat. 09, div. 120°.

Hab. Sta. Barbara (Jewett); coast of California south from 287

Monterey, beach to 20 fathoms; Catalina Island, 10-20 fathoms, State Coll. no. 398 a (Cooper).

## 453. Amycla tuberosa.

A. testa A. minori simillima, sed vertice nucleoso tuberoso; anfr. iv., tumidis, rapide augentibus; apice minimo, margines spiræ rectos parum superante, interdum subdecliviter sito; testa adulta interdum unicolore, livida seu aurantiaca; plerumque albida, rufo-fusco varie picta, seu maculata, seu nebulosa, seu strigata strigis radiantibus seu flexuosis, seu varie penicillata, sæpe fascia tessellata subsuturali; anfract. norm. v., planatis, suturis distinctis; basi subangulata; apertura pyriformi, canali satis prolongato, arcuato; labro intus acuto, deorsum quasi tumidiore, postice sinuato, intus circ. octodentato; labio parum conspicuo, vix rugulato; columella torta, axi antice striato; superficie lævi, seu interdum minutissime sub lente radiatim striolata; epidermide cornea, tenui, subdiaphana, spiraliter sub lente minutissime striolata: operculo Nassæformi, parvo, marginibus irregulariter serratis, cicatrice bilobata. Long. 32, long. spir. 18, lat. 14, div. 30°.

Hab. Sta. Barbara, recent and fossil (Jewett); coast of California north to Monterey; Catalina Island, 8-10 fathoms (Cooper).

As this belongs to a group of closely allied species of Nassoid Columbellæ, a minute diagnosis is given. The fossil specimens are larger, and have the remarkable nucleus more perfect, than any of the recent shells yet seen. In appearance it scarcely differs from the small variety of the Mediterranean A. minor, Scac.; but that (with A. corniculata) has a Chrysodomoid nucleus, the Californian an Alaboid.

#### ? Anachis penicillata.

(A. testa parva, Metuloidea, turrita, albida, rufo-fusco plus minusve penicillata; anfr. nucleosis ii., tumidis, helicoideis, apice mamillato; norm. vi., tumidis, suturis valde impressis; costis radiantibus circ. xii., angustis, expressis; lirulis spiralibus extantibus, in spira plerumque vi. supra costas transcuntibus; apertura pyriformi, antice effusa; labro postice sinuato. Long. '21, long. spir. '13, lat. '08, div. 25°.

Hab. Sta. Barbara (Jewett); S. Diego, Catalina Island, shore to 10 fathoms (Cooper).

Neither of the specimens sent is quite mature. The mouth is that of an adolescent *Anachis*, but the sculpture is Metuloid.

## Siphonalia fuscotinctà.

S. testa minima, turrita, albida, apicem versus fusco tincta; anfr. nucl. ii., compactis, subplanatis, apice mamillato; norm. iv., convexis, suturis impressis; costis radiantibus rotundatis, tumentibus, basim versus evanidis, interstitiis undulatis, subæquantibus; lirulis

crebris spiralibus, costas superantibus; apertura pyriformi, in canalem brevem apertum contortum producta; labro acuto; labio haud conspicuo; columella canalem versus valde contorta. Long. 17, long. spir. 1, lat. 08, div. 32°.

Hab. Sta. Barbara (Jewett).

The unique specimen is like a minute edition of Siphonalia Kellettii, but does not accord with the young of that or of any other species known in the region. It is probably not mature.

## L.

## DIAGNOSES

OF

# NEW FORMS OF MOLLUSCA,

COLLECTED BY COL. E. JEWETT

ON THE

WEST TROPICAL SHORES OF NORTH AMERICA.

BY

PHILIP P. CARPENTER, B.A., Ph.D.

From the Annals and Magazine of Natural History. Third Series, Vol. XV., pp. 399-400, May, 1865.

(291)

	·			
		•		
:				
			i	

### **DIAGNOSES**

OF

## NEW FORMS OF MOLLUSCA

COLLECTED BY COL. E. JEWETT

ON

THE WEST TROPICAL SHORES OF NORTH AMERICA.

BY

## PHILIP P. CARPENTER, B.A., PH.D.

### Rissoina expansa.

R. testa magna, lata, tenuisculpta, alba, nitente, subdiaphana; marginibus spiræ parum excurvatis; anfr. nucl. lævibus, vertice mamillato; norm. v., planatis, suturis distinctis; costulis radiantibus circ. xxiv., obtusis, haud extantibus, interstitia æquantibus, peripheriam versus evanidis; circa basim productam striis spiralibus expressis; medio lævi; apertura valde expansa, semilunata; labro subantice producto, varicoso, antice et postice alte sinuato; labio calloso. Long. 35, long. spir. 18, lat. 17 poll., div. 30°. Hab. Mazatlan (teste Jewett).

This fine species is the largest known in the fauna. It most resembles R. infrequens, C. B. Ad., which was described from a dead shell.

#### Mangelia hamata.

M. testa carneo-aurantiaca, satis turrita, marginibus spiræ excurvatis; anfr. nucl. ii. globosis, tenuissime cancellatis, apice mamillato; norm. vi., subelongatis, inspira tumentibus, subangulatis, suturis impressis; costis radiantibus x.-xii., acutioribus, validis, circa basim prolongatam continuis; interstitiis concavis; lirulis spiralibus filosis, distantibus, supra costas transeuntibus, in spira iii.-iv.; apertura subelongata, quasi hamata, intus lævi, intense colorata; labro

acuto, dorsaliter varicoso, postice valde sinuato. Long. '24, long. spir. '13, lat. '1, div. 25°.

Hab. Panama (teste Jewett).

This very beautiful species is easily recognized by the varicose lip, sloping off to a sharp edge; by the deeply cut posterior notch, giving the smooth mouth a hooked appearance; by the sharp ridges, traversed by distant spiral threads; and by the flesh-tinted orange colour.

## Mangelia cerea.

M. testa M. hamatæ simili, sed textura cerea, aurantiaca, graciliore, anfractibus tumidioribus, haud angulatis; anfr. nucl. lævibus; normalibus v., costis radiantibus haud acutis, interstitia sequantibus; liris spiralibus validioribus, haud filosis, supra costas nodulosis, in interstitiis subobsoletis; apertura, testa adulta, ?....

Long. '25, long. spir. '14, lat. '1, div. 28°.

Variat testa rufo-fusca.

Hab. Panama (teste Jewett).

Col. Jewett's unique specimen is not mature. It is distinguished from M. hamata by the smooth nucleus, waxen texture, rounder whorls, more equal distribution of the contour between ribs and interstices, and especially by the spiral sculpture, which is faint in the hollows, but nodulose on the ribs. Mr. Cuming has a specimen with the same texture, but of a rich brown colour.

## Chemnitzia cælata.

C. testa satis magna, cinerea, elongata; anfr. nucl.?...; norm. xiii., planatis, suturis vix impressis; costis radiantibus xx.-xxviii., rectis, haud semper convenientibus, subacutis, ad peripheriam subito truncatis; sulcis spiralibus in spira iv.-v., valde impressis, interstitia et costarum latera transeuntibus, juga haud superantibus; basi subito angustata, angulata, lirulis spiralibus circ. vi. ornata; apertura subquadrata; columella satis torta. Long. 35, long. spir. 3, lat. 09, div. 13°.

Hab. West coast of North America (Jewett).

This beautiful and unique shell was probably from Panama; but there was no locality-mark. It is remarkable for its deep furrows and the suddenly shortened and spirally sculptured base. It is much larger and broader than the northern C. Virgo, and differs in details of sculpture.

## M.

## DIAGNOSES

DES

# MOLLUSQUES NOUVEAUX

PROVENANT DE CALIFORNIE,

ET PAISANT PARTIE DU MUSÉE DE L'INSTITUTION SMITHSONIENNE.

BY

PHILIP P. CARPENTER, B. A., PH. D.

From the Journal de Conchyliologie, Vol. XII. (Third Series, Vol. V.), pp. 129-149, April, 1865.

(295)

. · • . Diagnoses de Mollusques nouveaux provenant de Californie et faisant partie du musée de l'institution Smithsonienne,

PAR PHILIP P. CARPENTER, B. A., PH. D.

I.

D'après les lois des États-Unis, tous les objets d'histoire caturelle recueillis dans le cours des expéditions faites par 297 les États deviennent la propriété de l'institution Smithsonienne, qui est autorisée, de plus, à échanger les doubles. Cette institution, si bien dirigée par le professeur Henry, qui en est le secrétaire, n'a pas pour objet principal son seul agrandissement; elle est établie pour « l'accroissement et la propagation de la science parmi les hommes, » c'est-à-dire qu'elle embrasse toutes les nations. Dans l'échange des doubles, on n'a pus pour but d'obtenir un quid pro quo, mais plutôt d'envoyer les échantillons à quelque endroit où ils seront plus utiles pour l'avancement de la science. Le revenu de l'institution ne suffisant pas pour avoir à poste fixe des naturalistes chargés de classer et de décrire au besoin les objets d'histoire naturelle de ce musée, on envoie ces objets en communication à des naturalistes des États-Unis ou d'autres pays, selon leur spécialité, en vue d'arriver à déterminer les espèces et de faire choix des échantillons pour leur collection permanente et pour les échanges. En conformité de ce principe, les directeurs de l'institution m'ont transmis en Angleterre toutes les coquilles recueillies sur la côte ouest d'Amérique. Je les ai soigneusement comparées avec les types de la collection Cuming et du musée britannique; et, par suite de cet examen comparatif joint à celui de mes propres matériaux, je me suis trouvé dans la nécessité de décrire à peu près trois cents espèces ou variétés locales. en dehors de celles que j'ai publiées antérieurement dans mon catalogue des coquilles de Mazatlan.

On trouvera des renseignements sur ces espèces et sur toutes les sources originales d'information concernant le même sujet, dans mon «Supplementary Report on the present state of our knowledge of the Mollusca of the West coast of N. America, » écrit à la demande de l'Association britannique pour l'avancement de la science, et 298

publié dans ses Transactions pour l'année 1863 (p. 517-686). Aux pages 656 664, on peut consulter une table disposée de manière à faire voir d'un coup d'œil toutes les espèces de la région de Vancouver et de Californie, jusqu'ici très-peu connues, avec tous les endroits où on les a recueillies, d'après les renseignements fournis par les principaux collecteurs. Dans les mêmes pages on trouvera une description très-succincte des espèces qui sont nouvelles ou peu connues : quant aux diagnoses latines, elles ont été publiées dans divers journaux scientifiques, selon la source de provenance des espèces qu'elles concernent. Ainsi, par exemple, on doit en chercher le plus grand nombre, qui ont été draguées par le docteur Cooper, lors du Grological Survey de l'État de Californie, dans les Proceedings of the California Academy, 1864-5. Les espèces draguées par le docteur Kennerley au Puget-Sound se trouvent décrites dans le Journal of the Philadelphia Academy, 1865. Les espèces trouvées par le colonel Jewett, en Californie, ont été publiées dans les Annals of natural History, 1864-5; celles qui ont été recueillies par M. Swan et les jeunes Indiens, de l'instruction desquels il est chargé, à la baie de Neeah (vis-à-vis l'île de Vancouver), et par M. Xantus, au cap St.-Lucas, se trouvent décrites dans le même recueil périodique (1864). Dans les Proceedings of the zoological Society (1863, p. 539-369), on trouvers un examen critique du Panama cataloque du professeur C. B. Adams, fait d'après ses échantillons typiques; et, pendant le cours de la présente année, le même journal doit publier les espèces nouvelles de la région tropicale, recueillies par MM. Reigen, C. B. Adams, etc.

Profitant de la bienveillance avec laquelle l'éditeur du Journal de Conchyliologie a bien voulu m'ouvrir les co-

lonnes de son recueil scientifique, je me propose de donner, dans cet article, les diagnoses des espèces nouvelies de Californie, qui ne se trouvent pas décrites dans les mémoires cités plus haut. Je me trouve dans l'impossibilité · d'en donner en même temps les figures, attendu que j'ai déjà restitué les échantillons typiques à l'institution Smithsonienne; mais cette absence de figures est moins regrettable, si l'on considère qu'elle n'est que momentanée, et que les espèces en question doivent être prochainement dessinées et gravées sur bois par le savant artiste, M. le D' W. Stimpson, pour le Manuel des Mollusques de la côte ouest d'Amérique, que je prépare en ce moment, à la demande de l'institution Smithsonienne (1). Lorsqu'il existe des doubles de ces diverses espèces, on les trouvera ou dans le Musée britannique ou dans la collection Cuming. Warrington (Angleterre), 15 février 1863.

II.

#### 1. ANGULUS GOULDII.

- A. t. parva, alba, tenui, tumida, subdiaphana, subquadrata; epidermide pallida, tenuissima, induta; lævi, lineis incrementi haud exstantibus; antice et ventraliter inflata, marginibus regulariter excurvatis; parte postica minima, haud angulata; umbonibus prominentibus: intus, dentibus cardinalibus utraque valva uno simplici unoque bifido, validis, obtusis; laterali antico valva dex-
- (1) Je prie les naturalistes qui trouveraient des erreurs dans mes ouvrages déjà publiés, ou qui posséderaient de nouveaux matériaux relatifs aux Mollusques de la côte ouest d'Amérique, de vouloir bien me communiquer leurs renseignements, en me les adressant chez M. le professeur Henry, Smithsonian institution, Washington, D. C., États-Unis, afin que je puisse rendre ce Manuel aussi complet et aussi evact que possible. P. C.

tra curto, valido, exstante; postico obsoleto; valva sinistrali nullis; nymphis rectis, inconspicuis; sinu pallii maximo, subtriangulari, fere cicatricem alteram tenus porrecto; cicatricibus adductoribus postica subquadrata, antica elongata. — Long. 48, lat. 4, alt. 1 poll. (1).

Hab. San Diego, Cassidy. L'île de Cerros, dans la basse Californie, Ayres.

Cette petite coquille porte le nom de « Mæra Gouldii, Hanl., » dans le musée Cuming et dans les Genera de MM. Adams (t. II, p. 396), mais je n'ai pu parvenir à en trouver de diagnose publiée. Sur quelques-uns des échantillons, on peut trouver le commencement d'une dent latérale postérieure. Ainsi la disférence entre les sousgenres Mæra et Angulus de MM. Adams est de très-peu d'importance. Cette espèce offre l'aspect de l'état jeune du Lutricola Dombeyi, Lamarck (2), mais elle en dissère par la charnière.

- (1) Les dimensions des espèces sont données en pouces anglais, dont chacun = 2.53 centimètres.
- (2) Pour cette section de Scrobicularia, MM. Adams proposent le vocable Capsa; ce qui fait grandement confusion, Capsa étant un nom de Lamarck, synonyme, il est vrai, d'Iphigenia, Schumacher, mais néanmoins très-usité. Je propose de reconstituer le genre ancien Lutricola, de Blainville, pris dans un sens restreint, pour ce groupe, intermédiaire entre les vrais Scrobicularia et les Macoma, ainsi qu'il suit:

Sous-genre Lutricola.

- = Lutricola, Blainv. pars.
- = Capsa, H. et A. Ad., non Lam.
- = Scrobicularia, seu Macoma, seu Tellina, pars, auct.

Testa tumida, sæpe inæquivalcis, irregularis, subquadrata seu antice producta; pars postica undata seu truncata; cartilago fossa subinterna sita, ligamento curtiore contigua: dentes cardinales utraque valva duo, laterales nulli.

Ex. Lutricola ep'rippium, Solander, L. alta, Conrad; L. Dombevi, Lamarck, etc.

## OEDALIA, n. g.

Étym. offakea (une coquille) rensiée.

Testa inflata, tenuis, æquivalvis, æquilateralis, cycladiformis: margo haud hians, haud sinuatus: ligamentum et cartilago externa: dentes cardinales 3-2, bifidi, laterales nulli: sinus pallii magnus.

## 2. OEDALIA SUBDIAPHANA.

OE. t. albida, tenuissima, subdiaphana, submargaritacea, tumente; lævi, striulis incrementi exillimis; epidermide pallide straminea, tenuissima, induta; suborbiculari, umbonibus tumentibus, prominentibus; marginibus omnino satis excurvatis, antico rotundato, postico paululum porrecto, lunula nulla: intus, valva sinistrali dentibus cardinalibus 3 bifidis, radiantibus, quorum centralis major, valva dextra 2 bifidis, intercalantibus; nymphis parvis, curtis, tenuibus; ligamento circa umbones excurrente; lamina cardinali dorsaliter parum claviculata; cicatricibus adductoribus parvis, marginem dorsalem versus sitis. antica ovali, postica subrotundata; sinu pallii regulariter ovali, per duas trientes interstitii incurrente, longitudinaliter tenuissime corrugato; linea pallii antice a margine remota, diagonaliter reflexa. - Long. . 52, lat. . 14. alt. 26, poll.

Hab. San Diego, Cassidy.

Je n'ai vu qu'un seul échantillon de cette coquille fort remarquable. Après l'avoir examinée pour la seconde fois et avec beaucoup de soin au microscope, pour caractériser l'espèce et pour comparer ses caractères avec ceux du Cooperella scintilla formis, j'ai eu le malheur de le laisser tomber à terre et de le briser : mais je puis attester l'exactitude de la description. Cette espèce a l'aspect externe 302

d'un Kellia suborbicularis; l'inflexion palléale d'un Semele; le ligament circumumbonal des Circe et des Psephis; et une charnière très-compleve, contenant cinq dents, toutes bifides. Avec le sous-genre Cooperella, qui en diffère comme les Lutricola et les Macoma (le cartilage étant semi-interne) et peut-être avec les Cycladella, elle constitue un groupe particulier des Tellinidæ

#### 3. PSEPHIS TELLIMYALIS.

Ps. t. valde transversa, subquadrata, tumidiore, valde inæquilaterali; umbonibus obtusis, vix prominentibus; pallide carneo-lutescente, purpureo (maxime circa marginem dentesque) tincta; epidermide tenuissima induta; tota superficie creberrime concentrice striata; marginibus, dorsali et ventrali subparallelis, antico rectiore, postico rotundato; lunula inconspicua: intus, dentibus centralibus minimis, anticis elongatis, posticis valde elongatis; sinu pallii vix sinuato. — Long. ·09, lat. ·07, altıt. ·04, poll.

Hab. Californie (sur la partie dorsale d'une Haliotide, Ronoell).

Le sous genre Psephis se compose de très-petites coquilles vénériformes, dont l'animal est ovivipare, comme celui des Cyclas, etc., des eaux douces, et des Bryophila parmi les Lamellibranches marins. La charnière porte trois dents; quelquefois elles ressemblent à celles des Chione; mais ordinairement les dents antérieures et postérieures se prolongent. Le Psephis tellimyalis se trouve sur les limites extrêmes du groupe. Il a l'aspect extérieur d'un Tellimya bidentalis et quelque chose aussi de sa charnière, à cause du très-grand développement des deux dents terminales aux dépens de la dent centrale. Je n'en ai vu qu'un seul échantillon, qui appartient au révérend J. Rowell, pasteur à San Francisco.

#### 4. TAPES LACINIATA.

T.t. • T. stamineæ • simili, sed majore, fragili, multo tenuiore; satis tumida, subovali, regulariter excurvata, cinerea; lunula linea impressa, parum definita; marginibus, postico vix subquadrato, antico producto; ligamento haud prominente; costis radiantibus acutis, distantibus, ventraliter dimidium interstitiorum æquantibus, postice parvis, crebris, antice latis; laminis concentricis creberrimis, vix erectis, costas transeuntibus, a costis et interstitiis eleganter undatis, haud nodosis: pagina interna albida; dentibus cicatricibusque ut in •T. staminea• formatis; sinu pallii paulum longiore, acutiore. — Long. 2• 4, lat. •2, alt. 4•4, poll.

Hab. San Diego, Rich, Blake, Cooper.

Cette espèce est remarquable, en même temps pour la délicatesse de sa sculpture, et pour les caractères particuliers de sa texture. Elle appartient au même groupe que les T. Adamsii, Reeve, T. tenerrima, Carpenter (décrit d'après un individu très-jeune) et T. staminea, Conrad. Cette dernière espèce compte parmi ses variétés les V. Petitii et V. ruderata, Deshayes, V. mundulus, Reeve (= T. diversa, Sowerby) et V. tumida, Sowerby. Mais elle se distingue facilement de toutes ces formes par ses lames concentriques, disposées au-dessus des rayons et de leurs interstices bien prononcés, et laciniées au sommet fort élégamment.

## 5. KELLIA (LAPEROUSII, var.) CHIRONII.

K. t. • K. Laperousii • simili; sed tenuiore, minus transversa, ventraliter excurvata; epidermide pallidiore; um-304 bonibus angustioribus: dentibus multo minoribus, haud exstantibus. — Long. '76, lat. '62, alt. '41, poll. Hab. Neeah Bay, Swan; San Pedro, Cooper.

Cette variété est assez distincte de la forme typique du K. Laperousii; mais la suite d'individus que j'ai eu occasion d'examiner comparativement m'a permis de me convaincre que l'espèce variait beaucoup.

#### 6. KELLIA BOTUNDATA.

K. t. tenuissima, orbiculari, satis convexa, æquilaterali, lævi; epidermide subnitente, pallide olivacea; umbonibus angustis, satis prominentibus; marginibus omnino regulariter excurvatis: intus, dentibus cardinalibus 2 tenuibus, satis conspicuis, clavicula haud exstante; dentibus lateralibus satis elongatis.—Long. ·6, lat. ·5, alt. ·28, poll.

Hab. Monterey, Taylor.

Cette espèce est beaucoup plus grande, mais moins rensiée que le K. suborbicularis, et se distingue facilement par sa forme presque complétement arrondie.

#### 7. OSTREA LURIDA.

O. t. irregulari, suborbiculari, ellipsoidea, seu producta; superficie interdum laminata, purpurea seu squalide grisea, haud costata: intus olivacea, interdum purpureo tincta, seu omnino purpureu, submargaritacea; cardine recto; umbonibus haud conspicuis, haud excavatis; margine interno, cardinem versus sæpe crenulato.

Animal flavore cupreo tinctum.

Var. laticaudata, Nutt, ms.: t. omnino purpurea, margine producto, undato; cardinem versus, denticulis conspicuis instructo.

Hab. Vancouver Is., à 2-5 toises sur fond de vase, Lord; 20 305

Shoalwater Bay, Cooper; Neeah Bay et Tatooche Is., Swan (Var.) Monterey, Nuttall.

?Var. expansa: t. omnino planata, per totam superficiem affixa; extus, marginem versus laminata, purpureo radiata; intus, olivaceo-rufa, ligamento parvo, in medio undato, solidiore.

Hab. S. Pedro, Cooper.

?Var. rufoides: t. « O. Virginicæ » jun. simili; sed tenuissima, luteo-rufa, intus rufo tincta; umbonibus concavis.

Hab. S. Diego, Cassidy, Cooper. Fossile à San Pablo, 20 pieds au-dessus de la haute marée, Newberry.

Les Ilustres de Californie, dans leur état ordinaire, comme on les trouve au Shoalwater Bay (Orégon), ont à peu près la couleur et l'aspect de petites Ethéries. Les individus des mers plus chaudes ont l'air d'être très-distincts; mais, d'après le docteur Cooper, qui a une grande expérience de la matière, ce ne sont que des variétés. Je ne pouvais pas prendre pour nom spécifique celui que le professeur Nuttall avait donné en manuscrit à une forme accidentelle. Quant aux autres formes, assez constantes dans leurs diverses localités, je leur ai donné des noms qui pourront servir à les désigner soit comme espèces, soit comme variétés, lorsque, plus tard, la connaissance d'un plus grand nombre d'individus permettra d'avoir une opinion définitive en ce qui les concerne. La variété rusoides a beaucoup de l'aspect de l'O. Virginica (Maz. Cat., n°. 212). Elle était désignée sous le nom « O. ?rufa » par le docteur Gould; mais je suis porté à croire que l'espèce de Lamarck est une variété des Huitres atlantiques, attendu que les coquilles de la haute Californie n'étaient pas connues à l'époque où il a écrit.

#### 8. TORNATELLA PUNCTOCÆLATA.

T. t. tenui, satis elongata, ovoidea; cinerea, fasciis duabus latis fuscis ornata; vertice nucleoso decliviter cælato; anfractibus normalibus t vix convexis, suturis distinctis; tota superficie sulcis subdistantibus cælata, punctis impressis seriatim dispositis, quarum 7-9, in spira monstrantur; basi ovali; apertura latiore; labro acuto, antice sinuato; labio indistincto; plica acuta declivi juxta parietem, haudexstante; columella antice torta. Long. 2, long. spir. 06, lat. 09, poll.: div. 50.

Hab. Santa-Crux, Rowell. - San Diego, Cooper.

Cette espèce est un peu aberrante, à cause de son ouverture large, de son pli reporté près du bord pariétal et de sa columelle tordue comme celle des *Bullina*. La ciselure des tours ressemble aux impressions que laisserait une série de petits colliers.

#### 9. CYLICHNA PLANATA.

C. t. parva, cylindracea, subelongata, alba, lævi, epidermide straminea induta; marginibus fere parallelis; spira planata, haud umbilicata, haud mamillata; anfractibus 4 convolutis, suturis parum impressis; basi modice effusa; labro tenui, in medio satis producto, antice late arcuato, postice parum sinuato, haud canaliculato, suturam versus satis rotundato; labio distincto, postice subcalloso; columella plica satis exstante, axi basim circumgyrante. Long. 11, lat. 155, poll. : div. 180°.

Hab. San Diego, Cassidy.

On n'a trouvé qu'un seul échantillon de cette petite espèce, qui est intermédiaire entre les Cylichna et les Tornatina.

## Genus LOTTIA.

- = Lottia, Gray, pars.
- = Acmæa, seu Tectura, seu Patella, pars, auct.
- = Tecturella, Cpr. Brit. Assoc. Rep. 1861, p. 137; non Stimpson, Invert., Grand-Manan.

Testa Patellis quibusdam seu Helcioni similis; plerumque planata, solida, apice anteriori.

Animal margine pallii intus papillis lamellosis circa dorsum lateraque instructo, regione capitis interruptis; pede elongato, ovali, planato; branchia minima.

Ce genre est intermédiaire entre les Acmæa et les Scurria. Dans les Acmæa, le manteau est simple; dans les Scurria, il est garni, sur toute sa circonférence, de papilles qui, à première vue, offrent l'apparence des branchies des vraies Patelles; chez les Lottia, on trouve ces papilles sur le corps, mais non sur la tête de l'animal. De plus, la branchie, qui est ordinairement allongée et en forme de plume chez les Acmæa, et triangulaire chez les Scurria, est très-petite dans le genre qui nous occupe. Il serait prématuré de vouloir fixer définitivement les caractères conchyliologiques du genre Lottia, quoique le type soit très différent des Patelles ordinaires; car il est possible que quelques-unes des espèces que l'on considère actuellement comme des Patelles se trouvent être des Lottia, lorsqu'on aura eu l'occasion d'observer leurs animaux.

On sait qu'il y a quatre noms employés pour désigner les Patelles à branchie de petite dimension. Acmæa est le premier en date, ayant été publié dans l'appendice du voyage de Kotzebue. J'aurais voulu conserver pour ce groupe le vocable générique Tectura, employé (après Milne-Edwards) par Gray et MM. Adams: mais je trouve

que Sowerby sen., dans son Genera, a figuré l'espèce originale comme type de son « Lottia, Gray. »

C'est le docteur Cooper qui, le premier, a observé et signalé les particularités de l'animal; mais la diagnose que je viens de donner est le résultat des études du docteur Alcock, qui a succédé au capitaine Brown comme curateur du Musée de Manchester. Il a fait l'anatomie de presque toutes les *Patelles* de la côte ouest d'Amérique; mais je ne veux pas anticiper sur ses découvertes. Voici la diagnose de l'espèce typique.

## 10. LOTTIA GIGANTEA, Gray.

L. t. magna, crassiore, planata, expansa, textura sæpius extus spongiosa; nucleo minore, corneo, nigro-fusco, ancyliformi, vertice mamillato, subelevato; dein elongata, postice grisea, undulata; t. adolescente verrucosa, radiis obscuris, antice haud verrucosis; t. adulta plus minusve lata, plus minusve radiata seu verrucosa; apice plus minusve a margine remoto; parte antica seu haud exstante, seu circiter per quintam totius longitudinis projiciente, parte postica plus minusve elevata, convexa; extus ut in Acmæa pelta picta, albido-grisea, fusco-olivaceo coniose irregulariter strigata: intus, plerumque testudinaria, margine lato, nigro; spectro definito, seu rarius albido, cicatrice musculari fortiore, interdum purpureo seu violuceo tincta.

Long. (sp. normalis) 2.6, lat. 2.05, alt. .7, poll. A. Long. (sp. variantis) 2.95, lat. 2 35, alt. .8, poll. B.

On mesure de l'apex jusqu'au bord antérieur, dans le sp. A. 45.

On mesure de l'apex jusqu'au bord antérieur, dans le sp. B, ·05.

L'altitude de l'apex en sp. A est de 6. L'altitude de l'apex en sp. B n'est que de 35.

= Tecturella grandis, Cpr. Brit. Assoc. Rep., loc. cit., où l'on peut voir quelques détails sur les variations de cette espèce remarquable.

## 41. BITTIUM (?VAR.) ESURIENS.

B. t. B. filoso simili, sed multo minore, graciliore, interdum valde attenuata; sculptura t. juniore ut in B. filoso; sed t. adulta subobsoleta, interstitiis haud insculptis. Long. 27, long. spir. 19, lat. 085, poll.: div. 250.

Hab. Neeah Bay, Swan. Sta.-Barbara, Jewett. — Monterey, San Pedro, Cooper.

Bien que j'aie vu beaucoup d'individus de cette forme, et un plus grand nombre encore du B. filosum, Gld. (= Turritella Eschrichti, Midd. = Acirsa Eschrichti, Adams. Genera), je ne puis pas décider avec une certitude complète si c'est une véritable espèce, ou seulement une variété dégradée et, pour ainsi dire, affamée (esuriens) du B. filosum, qui, d'ailleurs, ne varie pas. Comme le B. filosum ne s'étend pas aussi loin au sud, il est probable que les échantillons californiens doivent être considérés comme di-tincts, tandis que les individus de la région Vancouvérienne peuvent être réunis au B. filosum. Tous les individus qu'on a envoyés étaient très-roulés.

## 12. BITTIUM ATTENUATUM.

B. t. valde gracili, attenuata; anfr. nucl... (detritis); normalibus 10 planatis, suturis haud impressis; t. juniore lirulis spiralibus 2 anticis conspicuis, aliis posticis parum conspicuis, supra costulas circiter 11. radiantes transeun-310

tibus; t. adulta costulis et lirulis anticis obsoletis; lirulis 2. suturalibus; basi prolongata, striis circiter 6 ornata; apertura ovali; columella intorta, parum emarginata. Long ·4, long. spir. ·31, lat. ·11, poll. : div. 18°.

Hab. Monterey, Taylor. - Neesh Bay, Swan.

Je n ai vu qu'un seul échantillon en bon état de cette espèce. Elle a la taille du *B. plicatum*, *A. Ad.*, mais la sculpture de la base est différente.

## 45. ?BITTIUM QUADRIFILATUM.

?B. t. satis tereti, pallide cinerea, tenuisculpta; anfr. nucleosis, primo omnino cælato, ?sinistrali, dein 2 lævibus, rotundatis, apice quasifmamillato; anfr. normalibus 7 subplanatis; suturis valle impressis, haud sculptis; costulis radiantibus circ. 16-22, angustis, subrectis, anfr. ult. crebrioribus, suturam versus evanidis; filis spiralibus semper æqualibus, supra spiram 4 angustis, expressis, costulus transeuntibus, haud nodulosis; filis duabus alteris, inter quas sutura sita est; basi tenue striata; columella intorta, parum effusa; apertura ovata; labio parvo, labro tenui, parum arcuato. Long. 26, long. spir. 18, lat. 09, poll: div. 25°

Hab. S. Pedro, Cooper. — S. Diego, Cassidy.

Dans cette espèce et dans quelques autres très voisines, les *B* asperum et *B* armilla!um, par exemple, le nucléus est très-différent de celui des *Bittium* typiques. Il est probable qu'elles n'appartiennent pas au même geure.

#### 14. BARLEBIA SUBTENUIS.

B. t. parva, tenui, interdum subdiaphana, rufo-cornea, anfr. nucleosis normalibus, apice submamillato; normalibus 1, planatis, suturis distinctis; basi rotundata; aper-311

tura subovata, peritremate continuo; labro acuto; labio distincto, lacunam umbilicalem formante; columella subangulata operculo semilunato, dense rufo-vinoso, subhomogeneo, haud spirali, rudi; apophysi prælonga antice columellam versus exstante. Long. 11, long. spir. 07, lat. 06, poll.; div. 40°.

Hab. S. Diego, Cassidy; sur l'herbe, Cooper. — Cape St.-Lucas, Xantus. — Mazatlan, Reigen.

Si l'on juge seulement d'après la coquille, on ne peut guère séparer cette espèce des petites variétés dégradées de l'Hydrobia ulvæ d'Europe. J'avais rapporté à cette espèce quelques individus, en très-mauvais état, de la collection Reigen (Maz. Cat., n° 417). Mais les individus frais qui ont été recueillis, grâce au zèle du docteur Cooper, possèdent l'opercule remarquable des Barleeia.

## 15. Barleeia (?subtenuis, var.) rimata.

B. t. • B. subtenui • simili; sed paulum tumidiore; anfractibus minus planatis; rima umbilicali conspicua.

Hab, S. Diego, Cassidy, Cooper.

Peut-être cette forme se trouvera-t-elle constituer une espèce distincte, lorsqu'elle sera mieux connue.

#### 16. BARLBEIA HALIOTIPHILA.

B. t. parva, turrita, lævi, angusta, tenui, rufo-fusca; marginibus spiræ subrectis; anfr. nucleosis normalibus, vertice submamillato; norm. 5 subplanatis, suturis distinctis; basi subplanata, obsolete angulata; aperturu ovata, peritremati haud continuo; labro tenui; labio parum calloso; columella vix arcuata; operculo ut in · B. subtenui · Long. · 1, long. spir. · 06, lat. · 05, div. · 30°.

Hab. Basse Californie, sur la partie dorsale d'une Haliotide, Rowell. Cette espèce est voisine du B. subtenuis; elle s'en distingue par sa taille beaucoup plus petite, et sa forme plus élancée.

## 17. DRILLIA TOROSA.

D. t. acuminata, lævi, aurantio-fusca, epidermide aurantio-olivacea induta; anfr. nucleosis ?...(detritis); normalibus 7 tumidioribus, suturis planatis; serie una tuberculorum validorum, subrotundatorum, anfractu penultimo 8, anfr. ultimo haud obsoletis; regione sinus parvi, rotundati paulum excavata; regione suturali haud sculpta; canali longiore; columella recta; labio tenui; labro acuto, postice sinuato. Long. 95, long. spir. 55, lat. 3, poll.: div. 30°.

Hab. Monterey, Taylor, Cooper.

Cette espèce, ainsi que d'autres Pleurotomidæ californiens, appartient à un groupe particulier, dont le D. inermis, Hinds, peut être considéré comme le type. Peut être ces formes seraient-elles mieux placées dans le sous-genre Ctionella, qui est vraiment marin, d'après les observations du docteur Stimpson sur les espèces du cap de Bonne-Espérance, et non pas Mélanien, comme l'a supposé le docteur Gray, et comme l'ont dit, après lui, MM. Adams et Chenu.

## 18. DRILLIA (?TOROSA, var.) AURANTIA.

D. t. • D. torosæ • simili, sed aurantia; linea suturali expressa; interdum spiraliter sculpta. Long. ·6, long. spir. ·32, lat. ·28, poll.: div. 38°.

Hab. San Diego, Cassidy. - San Pedro, Cooper.

Les individus des localités méridionales étaient tous en mauvais état, et je ne suis pas encore convaincu qu'ils appartiennent à la même espèce.

## 19. DRILLIA PENICILLATA.

D. t. • D. inermi • forma et indole simili; sed cinerca, rufo-fusco dense penicillata; lineolis creberrimis, interdum diagonalibus, seu zic zacformibus, seu varie interruptis; anfractibus planatis, plicato-costatis, costulis circiter 14, regione sinus minimi, lati, expansi interruptis, postice nodosis; canali effusa.—Long. 1.35, long. spir. .75, lat. .42, poll. : div. 25°.

Hab. Cerros Is., basse Californie, Veatch.

Tous les individus que j'ai vus de cette espèce étaient excessivement roulés, mais on peut la reconnaître trèsfacilement à sa coloration élégante.

### 20. ? DAPHNELLA ASPERA.

? D. t. parva, tenui, rufo-fusca, gracili, angusta, fusiformi, epidermide tenui induta; anfr. nucleosis 2 lævibus,
vertice contorto; normalibus (t. adolescente) 4 elongatis,
fenestratis, suturis distinctis; costulis radiantibus circiter 13 angustis, acutis, et costulis spiralibus, in spira
3, anfractu ultimo circiter 10, angustis, acutis, radiantes
superantibus, eleganter decussata; intersectionibus subnodulosis, interstitiis quadratis; apertura elongata, angusta, antice effusa; labro postice vix sinuato. — Long.
11, long. spir. 109, lat. 108, poll.: div. 35°.

Hab. Monterey, Taylor.

Je n'ai vu de cette charmante petite coquille qu'un seul échantillon très-frais, mais incomplétement adulte. Peut-être se trouvera-t-elle mieux placée dans le genre Mitromorpha, A. Adams?

#### 21. ODOSTONIA STRAMINEA.

0. t. • 0. inflatæ, var. elstiori • simili, sed multo ela-314

tiore; haud inflata, epidermide straminea, haud striulata. - Long. •18, long. spir. •08, lat. •1, poll. : div. 40.

Hab. basse Californie (sur la partie dorsale d'une Ilaliotide', Rowell. - Cap St.-Lucas, Xantus.

On peut facilement distinguer cette espèce de celles du Nord par sa spire allongée et son épiderme d'un jaune de paille.

## 22. CHEMNITZIA TRIDENTATA.

Ch. t. (quoad genus) magna, compacta, latiore; castanea, interdum.fasciis pallidioribus; anfr. nucleosis 3 helicoideis, apice conspicuo, marginibus spiræ rectis parum superantibus; normalibus 11 subplanatis, suturis distinctis; costis rectis acutis, interdum 19, interdum 24 tenus, haud attingentibus, circa peripheriam haud subito evanidis; interstitiis undatis, eleganter spiraliter sulcatis; sulculis circiter 8-10, costis haud superantibus; apertura subquadrata; labro intus tridentato; columella tortuosa; basi rotundata.—Long. 45, long. spir. 35, lat. 42, poll.: div. 16%.

Hab. Santa Barbara, Jewett. — Puget Sound, Kennerley .- Monterey, San Pedro, Cooper.

Les trois dents de cette belle espèce, cachées tout à fait à l'intérieur de l'ouverture, comme dans plusieurs espèces du genre Obeliscus, ont été, pour la première fois, observées sur un individu cassé et roulé de Santa Barbara. Celui-ci a 22 côtes; celui de Monterey, 20; celui du nord. 19: et ceux de San Diego, 24.

## 23. CHEMNITZIA (?var.) AURANTIA.

Ch. t. . Ch. chocolatæ . simili, sed multo minore, latiore. haud tereti, aurantia; anfr. nucleosis?... (detritis); normalibus 7 planatis, suturis impressis; costulis radiantibus circiter 26, haud expressis, ad peripheriam evanidis, interstitiis late undatis; lineolis spiralibus castaneis creberrimis tota superficie ornata; basi subrotundata; columella parum torta; apertura ovata; labro tenui, acuto; labio haud conspicuo.—Long. 23, long. spir. 16, lat. 07, poll.: div. 20.

Hab. Santa Barbara, Jewett .- Puget Sound, Kennerley.

Il est possible qu'on reconnaisse plus tard que cette espèce est le jeune âge du Ch. tridentata: elle est intermédiaire entre elle et le Ch. chocolata.

## 24. Volutella pyriformis.

V. t. parva, • V. margaritulæ • simili, sed aurantiaco pallide tincta; antice angustiore, magis elongata; labio conspicuo; labro postice parum sinuato, intus denticulis minus expressis ornato; plicis columellaribus normalibus, acutioribus.—Long. · 1, lat. · 065, poll.

Hab. San Diego, Cooper. — California, « Pacific Railway exploring Expedition. »

Cette espèce ressemble au *V. margaritula* (Maz. Cat., n° 589), mais elle est plus allongée en avant. Le genre *Votutella*, Swainson (non d'Orbigny), correspond au genre *Closia* de Gray.

## 25. OCINBBRA POULSONI (Nutt. ms.).

O. t. turrita, solida, luteo-albida, rufo-sanguineo spiraliter lineata; vertice nucleoso parvo, lævi, parum tumente: t. juniore rhomboidea, haud varicosa, spira planata, peripheria subangulata, canali recta, longiore, labro intus dentato, labio distincto, subcalloso: t. adulta, anfr. 7 primis planatis, posticis tumidis; suturis planatis, sedarea postica concava; costis subvaricosis crebris.

tumentibus, irregularibus, anfractu ultimo 7, circiter quinquies subnodosis; tota superficie spiraliter crebre insculpta; sulcis punctatis, rufo sanguineis; apertura ovali; labro acutiore, dorsaliter tumido, varicoso, intus dentibus validis circiter 6 munito; labio solido, sub suturam dente valido parietali munito, super columellam calloso; canali breviore, aperto. — Long. 1.85, long. spir. .96, lat. .93, poll.: div. 38.

Hab. San Diego, Nuttall. — Cerros Is., Veatch. — Santa Barbara, Jewett.

Je n'ai vu que trois individus de cette belle espèce : l'un d'eux, qui est typique, porte le nom de « Buccinum Poulsoni » dans la collection Nuttall qui fait partie du Musée britannique : un second, très-jeune, et d'un aspect fort particulier, bien qu'il appartienne évidemment à la même espèce, a été recueilli par le colonel Jewett, probablement à Santa Barbara (mais, d'après son étiquette, à Panama) : enfin celui du docteur Veatch provient de la basse Californie, et il est en très-mauvais état. Le premier a été dessiné sur bois pour l'institution Smithsonienne par M. Sowerby. Comme cette espèce intéressante est presque inconnue en France, j'ai cru devoir en donnex une description suffisamment précise.

P. P. C.



ON .

# THE PLEISTOCENE FOSSILS

COLLECTED BY

COL. B. JEWETT, AT STA. BARBARA, CALIFORNIA;

WITH

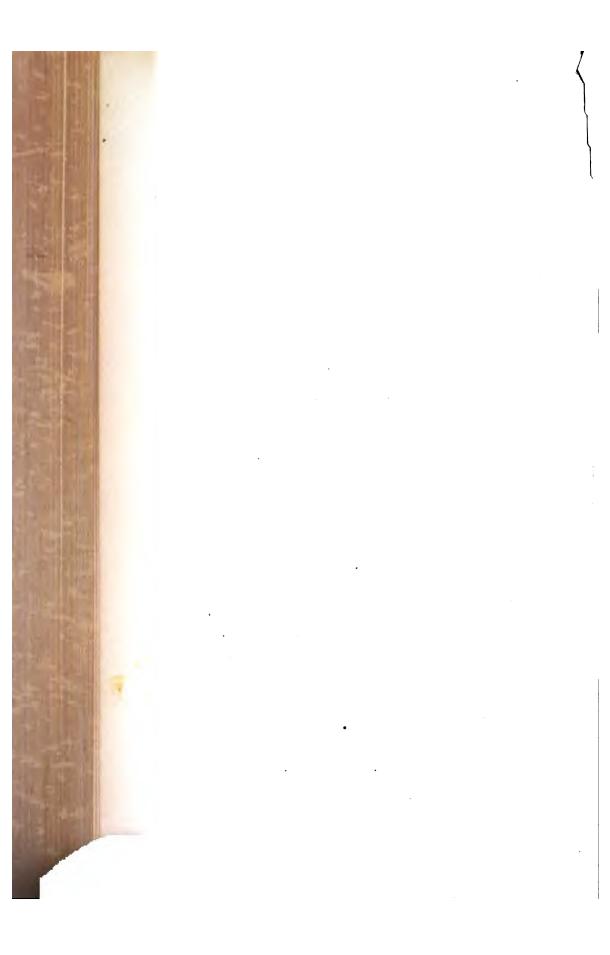
## DESCRIPTIONS OF NEW SPECIES.

BY

PHILIP P. CARPENTER, B.A., Ph.D.

From the Annals and Magazine of Natural History. Third Series, Vol. XVII., pp. 274—278, April, 1866.

(319)



# [From the Annals and Magazine of Natural History for April 1866.]

OK

## THE PLEISTOCENE FOSSILS

COLLECTED BY COL. E. JEWETT AT STA. BARBARA, CALIFORNIA:

WITH

DESCRIPTIONS OF NEW SPECIES.

BY

PHILIP P. CARPENTER, B.A., Ph.D.

THE study of the recent and tertiary mollusks of the west coast of America is peculiarly interesting and instructive, for the following reasons. It is the largest unbroken line of coast in the world, extending from 60° N. to 55° S., without any material salience except the promontory of Lower California. Being flanked by an almost continuous series of mountain-ranges, the highest in the New World, it might reasonably be supposed that the coast-line had been separated from the Atlantic from remote ages. The almost entire dissimilarity of its faunas from those of the Pacific Islands, from which it is separated by an immense breadth of deep ocean from north to south, marks it out as containing the most isolated of all existing groups of species, both in its tropical and its temperate regions. When we go back in time, we are struck by the entire absence of anything like the boreal drift, which has left its ice-scratchings and arctic shells over so large a portion of the remaining temperate regions of the northern hemisphere, and also by the very limited remains of what can fairly be assigned to the Eocene age. The great bulk of the land on the Pacific slope of North America (so far as it is not of volcanic origin) appears to have been deposited during the Miocene epoch. Here and there only are found beds whose fossils agree in the main with those now living in the neighbouring seas. To trace the correspondences and differences 321

between these and their existing representatives may be expected to present results analogous to those now being worked out with such discerning accuracy from the various newer beds of modern Europe.

The first collection of Californian fossils seen in the east was made near Sta. Barbara by Col. E. Jewett in 1849; but no account was published of them before the list in the British Association Report (1863), p. 539. They consist of forty-six species, of which twenty-nine are known to be now living in the Californian seas, and others may yet be found there. The following ten are Vancouver species, some of which may travel down to the northern part of California:—

Margarita pupilla, Galerus fastigiatus, Bittium filosum, Lacuna solidula, Natica clausa, Priene Oregonensis, Trophon Orpheus, Chrysodomus carinatus, C. tabulatus, and C. dirus.

Some of these are distinctly boreal shells, as are also Crepidula grandis (of which Col. Jewett obtained a giant,  $3\frac{1}{2}$  inches long, and which now lives on a smaller scale in Kamtschatka) and Trophon tenuisculptus (whose relations will be presently pointed out). So far, then, we have a condition of things differing from that of the present seas, somewhat as the Red Crag differs from the Coralline. But in the very same bed (and the shells are in such beautiful condition that they all appear to have lived on the spot, which was perhaps suddenly caused to emerge by volcanic agency) are found not only tropical species which even yet struggle northwards into the same latitudes (as Chrone succincta), but also species now found only in southern regions, as Cardium graniferum and Pecten floridus. Besides these, the following, unknown except in this bed, are of a distinctly tropical type, viz.:

Opalia, var. insculpta. Chrysallida, sp. Pisania fortis.

From a single collection made only at one spot, in a few weeks, and from the very fragmentary information to be derived from the collections of the Pacific Railway surveys (described by Mr. Conrad, and tabulated in the Brit. Assoc. Report, 1863, pp. 589-596), it would be premature to draw inferences. We shall await with great interest the more complete account to be given by Mr. Gabb in the Report of the California Geological Survey. With the greatest urbanity, that gentleman has sent his doubtful Pleistocene fossils to the writer, to be compared with the living fauna; but it would be unfair here to give any

account of them, except that they confirm the foregoing statements in their general character.

The following are diagnoses of the new species in Col. Jewett's

collection.

## Turritella Jewettii.

T. testa satis tereti, haud tenui, cinerea rufo-fusco tincta; anfr. subplanatis, suturis distinctis; lirulis distantibus (quarum t. jun. duæ extantiores) et striolis subobsoletis spiralibus cincta; basi parum angulata; apertura subquadrata; labro tenui, modice sinuato.

Hab. Sta. Barbara, Pleistocene formation (Jewett). San Diego,

on beach (Cassidy).

This species comes nearest to T. sanguinea, Rve., from the Gulf, but differs in the faintness of the sculpture. Mr. Cassidy's specimens may be washed fossils, or very poor recent shells.

#### Bittium ?asperum.

B. testa B. quadrifilato forma, magnitudine, et indole simili, sed sculptura intensiore; eodem vertice nucleoso abnormali; sed, vice filorum, costulis spiralibus costas spirales superantibus, subnodulosis; t. jun. costulis ii. anticis majoribus, alteris minimis; postea plerumque iv. subsequalibus, interdum iii. interdum aliis intercalantibus; sculptura basali intensiore; costis radiantibus subarcuatis.

? = Turbonilla aspera, Gabb, in Proc. Acad. Nat. Sc. Philadelphia, 1861, p. 368.

Hab. Sta. Barbara, fossil in Pleistocene beds; abundant (Jewett). S. Pedro, S. Diego, Catalina Is. 30-40 fms. (Cooper), State Col. no. 591 c.

Mr. Gabb informs me that his Turbonilla aspera is a Bittium. Unfortunately the type is not accessible; and as the diagnosis would fit several closely allied species, it cannot be said with precision to which it rightfully applies. As this is the commonest of the group, it is presumed that it is the "Turbonilla" intended. Should the type, however, be recovered, and prove distinct, this shell should take the name of B. rugatum, under which I wrote the diagnosis, and which was unfortunately printed in the Brit. Assoc. Report, p. 539. The fossil specimens are in much better condition than the recent shells as yet discovered.

#### Bittium armillatum.

B. testa B. aspero simili; aufr. nucl. ii. lævibus, tumentibus, vertice declivi, celato; dein anfr. ix. normalibus planatis, suturis impressis; t. adolescente seriebus nodulorum tribus spiralibus extantibus, supra costas instructis; costis radiantibus circ. xiii. fere parallelis,



seriebus, a suturis separatis, spiram ascendentibus; t. adulta, costulis spiralibus, interdum iv., intercalantibus; costulis radiantibus creberrimis; costis suturalibus ii. validis, haud nodosis; basi effusa, liris circ. vi. ornata; apertura subquadrata; labro labioque tenuibus; columella vix torsa, effusa, vix emarginata.

Hab. Sta. Barbara, Pleistocene, 1 sp. (Jewett). S. Pedro, S. Diego (Cooper).

The sculpture resembles Cerithiopsis; but the columella is pinched, not notched.

## Opalia (?crenatoides, var.) insculpta.

O. testa O. crenatoidei simili; sed costis radiantibus pluribus, xiii.— xvi., in spira validis; anfr. ult. obsoletis; sculptura spirali nulla; punctis suturalibus minus impressis, circa fasciam basalem lævem postice, non antice continuis.

Hab. Sta. Barbara, Pleistocene, 1 sp. (Jewett).

Very closely related to O. crenatoides, now living at Cape St. Lucas, and, with it, to the Portuguese O. crenata. It is quite possible that the three forms had a common origin.

## Trophon tenuisculptus.

T. testa T. Barvicensi simili, sed sculptura minus extante; vertice nucleoso minimo; anfractibus uno et dimidio lævibus, apice acuto; normalibus v., tumidis, postice subangulatis, suturis impressis; costis radiantibus x.-xiv., plerumque xii., haud varicosis, augustis, obtusis; liris spiralibus majoribus, distantibus, quarum ii.-iii. in spira monstrantur, aliis intercalantibus, supra cosías radiantes undatim transeuntibus; tota superficie lirulis incrementi. supra liras spirales squamosis, eleganter ornata; canali longiore, subrecta, vix clausa; labro acutiore, postice et intus incrassato, dentibus circ. v. munito; labio conspicuo, lævi; columella torsa.

Hab. Sta. Barbara, Pleistocene formation (Jewett).

This very elegant shell is like the least-sculptured forms of *T. Barvicensis*, from which it appears to differ in its extremely small nucleus. It is very closely related to *T. fimbriatulus*, A. Ad., from Japan, but differs in texture, and is regarded by Mr. Adams as distinct. It stands on the confines of the genus, there being a slight columellar twist, as in *Peristernia*.

#### Pisania fortis.

P. testa P. insigni simili, sed solidiore; crassissima, sculptura valde impressa; anfr. norm. v., parum rotundatis, suturis distinctis; costis radiantibus t. juniore circ. xii., obtusis, parum expressis, postea obsoletis; liris spiralibus validis, crebris (quarum t. juniore v., postea x., in spira monstrantur), subæqualibus, anticis majori-

bus; canali recurvata; lacuna umbilicali magna; labro intus crebrilirato; labio conspicuo, spiraliter rugose lirato.

Hab. Sta Barbara, Pleistocene formation (Jewett).

Col. Jewett's single specimen is in very fine condition, and is confirmed by a fragment obtained by Mr. Gabb, the palæontologist to the California State Survey. Although resembling Purpura aperta and congeners in the irregular rugose folds of the labium, and Siphonalia in the strongly bent canal, Mr. H. Adams considers that its affinities are closest with the Cantharus group of Pisania. That genus is extremely abundant in the tropical fauna, but does not now live in California. It is the only distinctly tropical shell in the whole collection; and its presence, along with so many boreal species and types, appears somewhat anomalous, like the appearance of Voluta and Cassidaria in the Crag fauna. It is distinguished from the extreme forms of P. insignis by having the spiral lire pretty equally distributed over the early whorls, by the close internal ribbing of the labrum, by the absence of the stout posterior parietal tooth, and by the great development of the columellar folds.

Note.—Unfortunately, during the long interval which has elapsed between the transmission of the MS. and receipt of the proof, the types have been returned to the owner, and (with the remainder of Col. Jewett's invaluable collection of fossils) have become the property of a college in New York State. As they are packed in boxes, and at present inaccessible, I am unable to give the measurements; but the unique specimens were drawn on wood by Mr. Sowerby for the Smithsonian Institution.—P. P. C., Montreal, Feb. 22, 1866.



## INDEX OF SPECIES.

N. B. The numbers without capitals refer to the foot-paging in this volume: those with capitals to the original works quoted in the list, O-X.

## Acanthochites ) Acanthochiton 5 achates, 72. avicula, 98, 136. arragonites, 108, O 252, O 318, P 198. Acanthopleura Californica, 135. fluxa, 98, 135. muscosa, 16. Acar gradata, 69. Achatina Albersi, P 175, O 287. Californica, 59. conularis, O 287. coronata, O 295. cylindracea, 0 286. fusiformis, 0 285. Isabellina, O 286. Liebmanni, O 295. octona, 44. pulchella, P 177. Sowerbyana, O 286. streptostyla, O 295. tortillana, O 286. turris, 59, P 175. zebra, P 176. Acicula turris, P 175. Acila insignis, 73. castrensis, 88, 91, 98, 130, 165. Lyalli, 130.

```
Acirsa
    borealis, 245.
    Eschrichtii, 310.
    menesthoides, 104, 217.
Aclis
    ascaris, P 438.
    fusiformis, O 260, O 335, P 437.
    tumens, O 260, O 335, P 438.
Aomæa
    æruginosa, 19, 84, O 283, O
      319.
    ancylus, O 174, O 215, P 208,
       V 221.
    ?ancyloides, 19, O 215.
    Antillarum, P 203, O 364.
    Asmi, 19, 23, 136.
    atrata, 27, 104, 152, 213.
    biradiata, 268
    cantharus, 214.
    cassis, 7, O 173, O 178, O 290,
       0 319, 0 348.
    var. cinis, O 233.
    cæca, 19.
    oribraria, 16, O 211, O 319.
     diaphana, O 319.
     digitalis, 7, 136, O 174, O 319.
     discors, 60.
     dorsuosa, 72.
     fascicularis, 108, 268, O 233,
       0 239, 0 252, 0 319, 0 351,
       O 364, P 203, P 206, P 210,
       P 546.
     fimbriata, O 319.
     floccata, 268.
     (!floccata, var.) filosa, 267.
                        (13)
```

#### Acmana

(!floccata, var.) subrotunda, 37, 268. gigantea, O 229, O 233, O 297. grandis, O 282, O 283, O 297, 0 319, 0 351. instabilis, O 212. Kochii, O 229, O 233. var. limulata, 26, 136, 151. livescens, O 319. mamillata, 7, O 173, O 199, O 215, V 222. marmorea, O 173, O 199, O 215, **V** 222. Mazatlandica, O 319. mesoleuca, 16, 24, 27, 104, 197, 214, 0 208, 0 209, 0 229, 0 233, 0 239, 0 241, 0 252, O 276, O 283, O 319, O 348, O 352, O 366, P 203, P 206, P 208, P 210, P 546. mitella, 24, 92, 108, O 236, O 319, O 252, O 291, O 364, P 210, P 538. mitra, O 173, O 177, O 199, O 212, O 213, O 215, V 222. monticola, 72. var. monticula, 72. mutabilis, O 239, O 252, P 203, P 205, P 206, P 546. Oregona, 170, O 229, O 233, O 240. paleacea, O 227, O 229, U 204. patina, 16, 23, 48, 48, 49, 69, 72, 92, 104, 136, 170, 214, 0 173, 0 174, 0 190, 0 198, 0 199, 0 209, 0 215, 0 219, 0 229, 0 233, 0 252, 0 290, 0 291, 0 319, 0 347, 0 348, 0 351, O 353, P 203, P 207, V 221. pelta, 16, 19, 23, 26, 48, 49, 84, 92, 136, 214, 309, 0 162, 0 173, 0 199, 0 223, 0 291, 0 319, V 221. persona, 16, 19, 23, 26, 84, 136, 151, 170, 0 174, 0 175, 0 199, 0 229, 0 233, 0 252, 0 291,

#### Acmæa

O 348, O 351, O 353, P 208, V 221. personoides, O 215, O 319, P pileolus, O 215, O 319. (!pileolus, var.) rosacea, 136. pintadina, 92, O 229, O 233. radiata, O 174, O 215, P 208, V 221. rosacea, 100, 136. scabra, 13, 23, 26, 84, 136, 151, 0 199, 0 213, 0 229, 0 233, 0 252, 0 282, 0 319, 0 349, O 351, O 352, O 353, V 222. scurra, O 190, O 215, V 222. scutum, 19, 170, O 173, O 190, O 215, O 219, P 207, P 209, V 221, V 222. !Sieboldi, 69. spectrum, 16, 23, 26, 84, 136, 151, 0 199, 0 213, 0 229, O 233, O 319, O 351, V 222. striata, O 319, O 360. strigatella, 152, 214, 268. strigillata, 104. subrotundata, 268. tessellata, O 229, O 233. testudinalis, 92, 0 219, 0 366, P 203. textilina, O 213, O 319. var. textilis, 151. toreuma, O 319, O 349. var. umbonata, 136. vernicosa, 24, 268. verriculata, O 229, O 233. vespertina, 268, O 319. (!vespertina, var.) vernicosa, virginea, 136. Acroloxus Nuttalli, 161. Acrybia aperta, 71. **Actinia** 

candida, Q 235.

#### Actinocyclus Alaba Sandregensis, 94. alabastrites, O 257, O 327, P Actinobolus borealis, 70. conica, O 257, O 327, P vi., ventricosus, 17. P 368. laguncula, O 257, O 328, P Acus luctuosus, P 387. 369. Adamsiella mutans, O 257, O 328, P 367, Osberti, 44. P 369, P 370. scalata, O 257, O 327, P 368. Adeorbis abjectus, 188, 190, O 273. supralirata, 109, 259, O 257, scaber, O 295, O 322, P 354. O 327, O 364, P 366, P 367, P 369, P 530. Verrauxii, 62. Admete terebralis, 109, O 257, O 327, arctica, 71, 0 329. P 367. tervaricosa, O 364. crispa, 0 217. viridula, 71, 0 329 violacea, O 257, O 327, P 367. **A**drana Alasmodon **Alasmodonta** lanceolata, 131. Adula arcuata, O 211. cinnamomea, 38, 237. falcata, 85, 120, O 210, O 211, faluata, 21, 26, 130, 237. 0 212, 0 213, 0 234, 0 310. parasitica, 237. margarifera, var. O 210. soleniformis, 236. Yubaënsis, 117, 120. stylina, 85, 113, 130, 155, 237. Aletes **Agopsis** centiquadrus, 24, 27, 37, 42, 43, cultellata, 159. 108, 194, O 324, O 255, O 275, Æneta P 301, P 306. harpa, 110. foentiquadrus, var. imbricatus, **Bolis** 42, O 255, P 303. iodinea, 94, 95. margaritarum, 42, O 255, O 324, Barbarensis, 95. P 303. opalescens, 94, 95. Peronii, O 282, O 324. pinnata, O 313. squamigerus, 43, O 200, O 233, Agaronia O 324, O 349, P 303, P 304, hiatula, O 177, O 366, P 472, **V** 226. P 473. Alora Steeriæ, O 366. Gouldii, 24, 40. testacea, 24, 28, 153, 155, 178, Alvania O 340, O 282, O 366, P 272, effusa, O 257, O 327, P 359. P 473. excurvata, O 257, O 327, P 359, Aglaia P 360. fidelis, 157. filosa, 114, 142, 241. infumata, 157. inconspicua, O 327. Akera reticulata, 114, 142, 241. culcitella, O 227, U 203. terebellum, O 327.

#### Alvania

tumida, 36, 109, 189, O 327, O 357, P 359, P 360. turrita, O 327.

#### 4 malia

columbiana, 159.

### **A**malthea

effodiens, R 5. Grayana, P 299, R 4. Panamensis, P 297, R 3.

#### **A**miantis

callosa, 22, 26, 39, 106, 126, 151,

279.

## **A**mioula

▼estita, 71.

#### **A**mnicola

Hindsii, 90. longinqua, 79, 162, O 283, 325. Nuttalliana, 84, 162. protea, 79, 162, O 283, O 325. seminalis 84.

#### Amphidesma (=Semele)

bicolor, 203, O 279. Californioum, O 289. corbuloides, O 222. corrugatum, 62. decisum, O 195, O 228, V 213. ellipticum, 39, 203, O 279. flavescens, O 226, U 199. nucleolus, P 108. physoides, P 105. proximum, 39, 62, 203, O 279, O 289, P 28. pulchrum, 203, O 188, O 280. punctatum, O 182. roseum, O 195, O 228, V 213. rubrolineatum, O 195, V 212. rupium, O 182. striosum, 39, 203, O 280. tortuosum, 203, O 280. venustum, P 28. ventricosum, 39, 203, O 280.

#### **A**mphichæna

Kindermanni, O 297. regularis, 104, 210.

#### **Amphithalamus**

inclusus, 23, 100, 142, 283. lacunatus, 99, 143.

#### **Ampullaria**

cerasum, O 291. Columbiensis, 155, O 291. Cumingii, O 179, O 291, O 326. malleata, O 295, O 326.

#### Amusium

caurinum, 22, 70, 73, 74, 81, 131, 165, 169.

#### Amycla

Californiana, 23, 148. chrysalloidea, 99, 148. corniculata, 288. gausapata, 23, 25, 76, 114, 148, 149. Gouldiana, 53. minor, 288. tuberosa, 23, 25, 114, 148, 288. undata, 99, 148.

#### Anachis

albonodosa, O 263, O 343, P 512. atramentaria, 180, 0 361, 0 344. auriflua, 112. azora, O 225. Californica, 25. conspicua, 180, O 269, O 344. coronata, 25, 112, 151, 155, O 263, O 171, O 343, P 508, P 513. costellata, 25, 180, 0 210, O 225, O 263, O 343, O 364 P 506, P 507. fcostellata, var. O 263. (!costellata, var.) pachyderma, O 263, P 507. costulata, O 363. diminuta, 25, 180, O 269, O 344. fulva, 180, O 263, O 283, O 343, P 509.

fluctuata, 25, 59, 61, 180, O 344.

Gaskoinei, 20, 53, 112, 260, O 263,

fuscostrigata, 105, 221.

O 343, P 511.

gracilis, 180, O 344.

#### Anachis

Guatemalensis, 35, 181. lentiginosa, O 344. lyrata, 25, 53, 180, O 344. maculosa, O 263. mæsta, 181, O 270, O 344, P 509. nigricans, 25, 181, O 344, O 361, P 509. nigrofusca, O 263, O 343, P 509. nucleolus, O 343. pallida, 112, 0 343. parva, 0 344. fpenicillata, 23, 150, 288. pygmæa, 25, 35, 112, 181, O 263, O 343, O 363, P 510, P 511. pygmæa, var. O 284, P 510. pulchrior, 112. rufotineta, 34, O 263, O 343, P 511. rugosa, 25, 59, 181, O 283, O 344. rugulosa, O 361, O 344. scalarina, 35, 180, O 263, O 343, P 505. serrata, 112, 260, O 343, O 263, P 509. subturrita, 99, 150. terpsichore, O 364. tesselata, O 270, O 344. tincta, 105, 221. tæniata, 112, 260, O 343. varia, 25, 181, O 344, P 507.

#### Anatina

alta, 39, 204, 0 280. argentaria, O 231.

## Anculosus

Nuttalli, 162.

#### Ancylus caurinus, 85, 161.

crassus, 161. fragilis, 161. Kootaniensis, 90, 161. Newberryi, 161. Nuttalli, 85. patelloides, 120, 161.

#### Anellum

annulatum, X 442,

2

#### Anellum

clathratum, O 256, O 324, X 442. elegantissimum, X 443. ?elegantissimum, var. Searles-Woodii, X 443. elongatum, O 256, O 324, X 442. - var. semilæve, X 442. firmatum, O 256, O 324, X 442. Floridanum, X 442. gracile, X 443. gurgulio, X 442. fparvum, 0 324. pulchellum, X 442. quadratum, O 256, O 324, X 442. ? ____ var. compactum, X 442. regulare, X 443. subimpressum, O 256, O 324, X 442. trachea, X 442. - var. obsoletum, X 442. tumidum, X 442. undatum, O 256, O 324, X 443.

#### Angulus

amplectans, 155, 272. decumbens, 271. Gouldii, 125, 151, 300. modestus, 88, 125, 167. obtusus, 125, 235. tener, 88, 125, 167. variegatus, 97, 113, 125, 235.

## Anodon (=Anodonta) angulata, 17, 18, 86, 92, 120,

164, 0 206, 0 210, 0 212, 0 297, 0 309. anatina, O 222. anserina, P 117. atrovirens, O 295, O 309. Californiensis, 77. cellensis, O 222. ciconia, O 170, O 232, O 227, O 309, O 248, P 117, U 202. cognata, 17, 91, O 210, O 212, 0 310. cornea, O 295, O 309. feminalis, 17, 86, 120, 0 210, 0 212, 0 213, 0 309.

18 INDEX OF SPECIES. Anomia Anodonta glauca, 27, 30, O 170, O 227, tenuis, 38, 198, 0 277, 0 312. Aplexa O 248, O 309, P 117, P 550. aurantia, P 179, P 180. herculea, O 222. implicata, P 117. elata, P 180. hypnorum, P 179. Montezuma, O 265. Nicaraguæ, O 295, O 309. Maugerse, P 180. Peruviana, P 180. Nuttalliana, 91, 164, O 197, O 211, O 309, V 218. Aphrodite columba, 47. Oregonensis, 17, 86, 91, 164, O 197, O 213, O 309, V Aplysia 218. Californica, 95. Randalli, 117, 120. Arca rotundovata, 117, 120. æquilatera, O 1. alternata, 200, O 229, O 277. sinuata, P 117. sinuosa, P 117. Americana, O 249, P 139. triangularis, 117. arata, 75. auriculata, O 277. triangulata, 120. Wahlamatensis, 86, 91, 92, 120, aviculoides, 38, 200, O 277. 164, 0 197, 0 309, ♥ 218. barbata, var. P 140. bicolorata, P 140. Anomala Cumingii, O 287. bifrons, O 249, O 310, P 134. inflata, O 287. Braziliana, O 289. insignis, O 287. brevifrons, 136, O 249, O 310. canalis, 80. Anomalocardia flexuosa, O 364, P 79. cardiiformis, O 285, O 289, O 310. clathrata, O 249, P 142, P 143. subimbricata, 23, 27, 38, 43, 55, 106, 201, 0 170, 0 247, 0 282, concinna, O 183, O 229, O 310. O 306, P 79, P 80. congesta, 80. subrugosa, 23, 201, O 229, O 232, devincta, O 367. 0 241, 0 247, 0 282, 0 306, Domingensis, O 249, P 142. O 364, P 79. donaciformis, O 249, P 142. Anomia emarginata, 200, O 183, O 249, Adamas, O 186, O 312, O 359. O 277, O 310, P 137. ephippium, O 222. formosa, O 183, O 234, O 310. fidenas, O 186, O 312. fusca, O 243, P 140. lampe, 24, 27, 38, 132, 151, 154, gradata, 200, O 175, O 229, O 278, 195, 198, 0 192, 0 208, 0 241, P 141. 0 250, 0 277, 0 281, 0 286, grandis, 23, 85, 153, 200, 260, O 312, P 167. 0 1, 0 160, 0 175, 0 183, macroschisma, 85, O 203, O 218, O 208, O 226, O 229, O 234, . 0 221, 0 222. O 249, O 278, O 366, P 132, olivacea, 72. P 134. patelliformis, O 218. hemicardium, O 234, O 249 Ruffini, 76. O 278, P 136. subcostata, 76,81. Helbingii, 62, O 278.

#### Aroa

illota, var. 0 278. imbricata, O 249, P 139. incongrua, O 249, P 134, P 135. labiata, 0 183, 0 249, 0 310, O 363, P 134. labiosa, O 249, P 134. ?lurida, 0 226. microdonta, 75. multicostata, 27, 85, 102, 107, 130, 260, 0 183, 0 234, 0 249, O 310, P 134, P 136. mutabilis, 200, P 139. nux, 0 229, 0 310. Obispoana, 81. lovata, O 236, P 538. Pacifica, O 229, O 282. pectiniformis, 10, 0 178, 0 289. pernoides, O 283, O 351. pholadiformis, 38, 200, O 278. pusilla, P 142. quadrilatera, O 183. Reeviana, 62, 200, O 278, O 310. reversa, 200, 0 234, 0 278, O 249, O 310, P 136. senilis, 31, O 366, P 132. setigera, P 140. similis, 38, 200, O 229, O 249, O 278, P 135. solida, O 226, O 278. squamosa, P 142. !squamosa, 62, O 249. Tabogensis, 200, O 249, O 278, P 141. trilineata, 80. trapezia, 14, O 202, O 249, P 550. tuberculosa, 14, 23, 38, 200, 0 183, 0 202, 0 229, 0 234, 0 249, 0 278, 0 310, P 135. umbonata, P 142. vespertilio, O 226.

#### Arcopagia

biplicata, 80, 81. lamellata, 97, 125. medialis, 80. unda, 81.

## **Arcturus**

rudis, 9.

#### Argina

brevifrons, 31, 154.

#### Argobuccinum

cancellatum, 33, O 338. Chemnitzii, O 338. nodosum, 182, O 261, O 270, O 367, O 338, P 454, V 209. Oregonense, O 338. scabrum, O 338.

#### Argonauta

argo, 99, 112, 150. hians, 153. var. papyracea, 112.

#### Arianta

arrosa, 157. Ayresiana, 158. Bridgesii, 158. Californiensis, 158. Carpenteri, 158. Dupetithouarsi, 158. exarata, 158. intercisa, 158. levis, 158. Mormonum, 158. Nickliniana, 157. ramentosa, 158. redimita, 157. reticulata, 158. Townsendiana, 157. Traskei, 158. tudiculata, 157.

#### Aricia

Arabica, 11, P 374. arabicula, 27, 109, 176, 0 258, O 328, P 373, P 374. caput-serpentis, P 374. obvelata, P 374. punctulata, 24, 109, 155, 176, 0 328.

#### Arion

foliatus, 159, O 313. foliolatus, O 210.

#### Artemis

Dunkeri, 201, O 224, O 278, P 61.

# 20 Artemis gigantea, 60, 0 352. Pacifica, O 278. ponderosa, 60, O 289, P 60. saccata, 201, O 227, O 246, O 278, P 62, S 161, U 201. simplex, O 186, O 246, O 278, O 287, P 61. subquadrata, O 186, P 62. tenuis, O 281. ?Assiminea dubiosa, 0 275. subrotundata, 114, 142, 241. **Astarte** Banksii, O 178. borealis, O 219. compacta, 88, 128, 168. compressa, 88, 128, O 223, P 162. corbis, 236. corrugata, O 219, O 223, O 306, 0 347. crassidens, O 175, O 347. Danmoniensis, O 223. Esquimalti, 128. fluctuata, 97, 128. Garensis, O 221. lactea, 20, 71, 72, O 175, O 219, 0 221, 0 347. Omalii, 128. omaria, 97. orbicularis, 128, 236. Scotica, 20, O 219, O 221, O 223. semisulcata, O 219, O 221, O 347. Istriata, O 178. triangularis, O 336. Asteronotus alabastrina, 94. sanguinea, 94. Asthenothærus villosior, 104, 209. ?Atys casta, 104, 212. Anlus grandis, 12. **Auricula** acuta, 0 275.

#### Auricula

concinna, O 275. infrequens, O 275. Panamensis, O 275. papillifera, O 275. stagnalis, O 275. Tabogensis, O 275. trilineata, 0 275.

#### Autonoe

rubra, P 108.

#### Avicula

Atlantica, O 227, O 236, O 249, O 364, P 148, P 538. barbata, 50. Cumingii, 50. fimbriata, O 296, P 550. heteroptera, 50. libela, 31, 199. margaritifera, O 277, O 295. Peruviana, 107, 153. sterna, 24, 50, 199, O I, O 227, 0 229, 0 233, 0 249, 0 277, O 364, P 148, P 151, U 203.

Barbarensis, 80, 82, 97, 130, 170. inæqualis, 154. intermedia, 82, 97, 130, 170. gigantea, 107. multicosta, 154, 155. parcipiota, 154. pectenoides, 154. septentrionalis, var. subobsoleta, 113, 130, 237. -

# Bankivia

varians, O 253, O 320, O 365, P 226.

#### Barbatia

alternata, 24, 31, 200, 256. aviculoides, 24. gradata, 24, 69, 97, 107, 130, 152. illota, 24, 107, 200. mutabilis, 155. pernoides, 102. Reeviana, 27, 107, 200.

# Barbatia solida, 24, 27, 107. Tahogensis, 31. vespertilio, 107. Barleeia haliotiphila, 142, 312. lirata, 109, O 257, O 327, P 552. rubra, 32, P 552. subtenuis, 32, 109, 142, 155, 313. (fsubtenuis, var.) rimata, 142, 312. Barnea candida, 205. Bela decussata, 71. excurvata, 89, 144, 169. fidicula, 17, 144, 169, O 331. harpularia, 71. rufa, 71. turgida, 73. turricula, 70, 144, O 348. Berenecia trispinosa, P 3. Bezoardica abbreviata, 24, 27, 110, 151, 151, tSt. inflata, 35. Binneya notabilis, 95, 157. Bithinia nuclea, 162, O 326. similis, 144, O 326. Bittium armillatum, 25, 99, 141, 311, 323. asperum, 99, 141, 311, 323. attenuatum, 141, 310. Escrichtii, 141. (?var.) esuriens, 23, 114, 141, 283, 310. fastigiatum, 23, 141, 283.

filosum, 19, 25, 84, 141, 310,

quadrifilatum, 141, 311, 323.

322.

nitens, 104, 218.

plicatum, 141, 311.

rugatum, 25, 323.

```
21
Bivonia
    albida, 24, 43, P 307, O 255,
      0 324.
    compacta, 114, 140, 239.
    contorta, 24, 43, 108, 153, O 235,
       O 237, O 255, O 324, P 305.
    fcontorta, var. indentata, P 307,
       0 255.
    glomerata, 194, P 309, W 316.
    indentata, 43, O 233.
    Panamensis, O 324.
    Quoyi, 43.
    subcancellata, W 315.
    sutilis, 43.
    triquetra, 43.
    var. typica, 43.
    var. variegata, 43.
Bornia
    inflata, P 105.
    luticola, 15, O 203.
    semilunum, P 108.
Brochina
    glabra, X 413, X 414, X 415,
       X 416, X 417, X 418, X 434,
       X 435, X 436, X 436, X 437,
      X 440, X 443.
    glabriformis, X 437, X 443.
Brochus
    annulatus, X 414, X 423.
    arcuatus, X 436, X 437.
    glaber, X 436.
    lævis, X 436.
    reticulatus, X 423.
    striatus, X 425.
    træchiformis, X 416, X 425.
Bryophila (=Philobrya)
    setosa, 24, 98, 104, 131, 212.
Buccinum
    aciculatum, P 389.
    angulosum, 71, O 177, O 347.
    Antoni, O 225.
    aplustre, 4.
    armatum, 10, 0 177, 0 294.
    biliratum, O 188, O 361, P 515.
    boreale, O 176, O 218.
    Boysii, 35.
```

#### Buccinum

brevidentatum, 10, O 177, O 178. cancellatum, 20, O 218. cinis, O 188. cingulatum, P 458. compositum, 4. Coromandelianum, O 188, P 516. corrugatum, 49, 84, O 342, O 211. crassum, 179, O 268. cribrarium, O 181, P 487. crispatum, 4, 5. cyaneum, O 217. decussatum, denticulatum, 10, O 177, O 178. devinctum, O 367 dirum, 18, 49. distortum, 10, 179, O 268. elegans, 48, O 285. elongatum, 10, 41. fossatum, 17, 48, O 209. fusiforme, O 218. gemmatum, O 238, P 515, P 542. gemmulatum, O 236, O 238, O 263, P 515, P 536. Geversianum, 7. gilvum, O 236, O 263, P 508, P 536 glaciale, 70, 71, O 218. Grænlandicum, O 218. hæmastoma, P 477, P 517. hydrophanum, 0 218. insigne, 179, O 268, P 514. interstriatum, 77. Janelii, O 204, O 263, O 269, P 517. lamellosum, 5. leicheilosos, O 177. lima, 4. liratum, 4, 5, 83. lugubre, 179, O 268. luteostoma, O 238, P 495, P 542. !metula, 0 206. minus, O 179. modestum, O 185, O 270. modificatum, 49.

Buccinum mutabile, O 204, O 263, O 268, P 516. nigrocostatum, O 188. nodatum, 10. Northim, O 293, nucleolus, O 225, P 535. Ochotense, 19, 71, O 218, O 221. ooides, 19, 0 218. ovoides, O 221. ovum, O 218, O 223, O 342. pagodus, 179, O 268, O 293, P 515. Panamense, O 296. parvulum, O 262, O 269, P 487. pastinaca, O 188. patulum, P 474. var. pelagica, 71. planaxis, 10, O 178, O 268. plicatum, 4, 5. plumbum, 6. polaris, O 177, O 218, O 347. Poulsoni, 317, O 201, O 342, V 227. prismaticum, O 225. pristis, 179, O 238, O 268, O 293, P 542. pseudodon, O 188. pulchrum, O 188, O 270, O pusio, O 293. ringens, 179, O 171, O 178, O 238, O 269, P 518. roseum, O 179. Rudolphi, O 178. Sabinii, O 217. sanguinolentum, 179, O 236, O 269, P 517, P 536. saturum, 4. scabrum, O 218, scalariforme + vars. 70. serratum, 48, O 238, O 268, 0 293, 0 294. sericatum, O 218. simplex, 19, 0 218, 0 221. Stimpsoni, 73.

#### Buccinum

Stimpsonianum, 73, 179, O 269. striatum, 28. strombiforme, O 178, P 491. subrostratum, 9, O 176, O 293. tectum, 10, U 178. tenebrosum, O 223. tenue, 10, 71, O 177, O 347. tiarula, O 262, P 496. tortuosum, 70. undatum, 19, 71, 73, O 217, O 221, O 223. undosum, O 263, P 515, P 516. undulatum, O 217. ventricosum, O 218. zebra, P 176.

#### Bulimulus

artemisia, 158.
Californious, 158.
elatus, 158.
exoclsus, 158.
inscendens, 158.
Mexicanus, 158.
pallidior, 158.
pilula, 158.
sufflatus, 158.
undulatus, O 288.
vegetus, 158.
vesicalis, 158.
Xantusi, 158.
Ziegleri, 158.

#### Bulimus

achatinellinus, O 240, O 315, O 359.

alternans, O 181.

alternatus, O 240, O 315.

artemisia, 116.

Bovinus, 59.

Californicus, 59.

calvus, O 183, O 240, O 315, O 359.

Chemnitzoides, O 240, O 315, O 359.

corneus, O 183, 315, O 359.

Darwinii, O 286, O 315, O 359.

#### Bulimus

discrepans, 44, O 183, O 315. Dysoni, 44. eschariferus, O 188, O 240, O 315, excelsus, 27, 116, O 227, O 234, U 203. fenestratus, O 286, O 290. fimbriatus, O 240, O 315. Gallapaganus, O 315, O 359. Gruneri, O 286, O 290. Honduratinus, 44. Humboldti, 59, 162. incendens, 116. incrassatus, O 315, 359. Jacobi, O 315, O 359, O 183, O 188. Laurentii, 162. Liebmanni, O 295. longus, 59. Manini, O 315, O 359. melania, 59. melanocheilus, 59, 0 251, P 176. Mexicanus, 6, 59, O 170, O 314, P 177. Moricandi, 44, O 286. nucula, O 287, O 315, O 359. nux, O 181, O 240, O 315, O 359. obscurus, O 222. pallidior, 27, 116, O 227, O 233, O 314, O 351, O 352, U 203. Panamensis, O 181, O 315. Prazianus, 44. pilula, 116. princeps, O 188, 59, O 251, O 314, P 176. proteus, 116. punctalissimus, O 265. rudis, O 290. rugiferus, O 183, O 315. rugulosus, O 188, O 240, O 315, 0 359. Schiedeanus, O 265. sculpturatus, O 286, O 315, 0 359.

24 INDEX OF SPECIES. Bulimus Bulla semipellucidus, 44. striatus, 162. sufflatus, 21, 27, 116. translucens, O 181, O 315. undatus, 7, 59, 119, O 170, P 171. O 251, P 176. jugularis, 77. unicolor, O 183, O 315. unifasciatus, 45, O 183, O 240, O 288, O 315, O 359. major, P 172. ustulatus, O 183, O 188, O 315, media, P 172. 0 359. vegetus, 116, O 227, O 233, U 203. verrucosus, O 287, O 359. vesicalis, 21, 116, O 227, O 234, **V** 220. U 203. vexillum, O 181, O 315. P 173. xanthostoma, O 265. Xantusi, 116. zebra, 59, O 251, O 314, P 176, P 540. Ziegleri, 59, O 314, P 177. zigzag, O 251, P 176. 0 313. Bulinus aurantius, 161. P 173. elatus, 161. hypnorum, 161. Bulla Adamsi, 24, 31, 37, 107, 194, striata, 5, O 364. 237, O 282, O 313, O 364, tenella, 85. P 173, P 540. velutina, O 216. australis, P 172. Californica, 35. calyculata, O 175. zebra, P 176. cerealis. O 227, O 229, U 203. Bullia constricts, U 203. crassula, 160. Perryi, 74. culcitella, O 227, O 229, U 203. Bullina decussata, O 179, O 261, O 271, P 454. eximia, 90. exarata, O 250, P 173, O 313. Bursa fontinalis, 160. fusco-costata, 41. fluviatilis, 161. var. fulminosa, 132. ?Busycon Blakei, 75. fusiformis. U 203.

gracilis, O 237, O 250, P 171, inculta, 79, O 227, U 203. infrequens, O 237, O 250, O 275, longinqua, O 284, O 313. luticola, 194, O 274, P 170. nebulosa, 22, 26, 79, 85, 107, 132, 151, 153, O 198, O 233, O 234, O 237, O 284, O 289, O 313, O 352, O 353, P 172, P 540, ineliulosa, O 250, O 296, P VI., Panamensis, O 295, O 313, P 172. petrosa, 165, O 367. punctata, 194, O 189, O 274. puncticulata, 194, O 274. punctulata, 31, 37, 194, O 229, Quoyii, 5, 24, 100, 107, 132 O 189, O 250, O 313, O 359, rotundata, U 204. rufolabris, O 189, O 313, O 359. vesicula, 79, O 227, O 284, U 204. virescens, 48, 79, O 284, O 313. ampullacea, 19, 70, O 218, O 221, 0 223, 0 342, 0 348. bitubercularis, 41.

#### Byssoarca

alternata, O 310, P 137. Americana, O 364. aviculoides, O 310. divaricata, O 249, P 142. †Domingensis, O 364. fusca, O 310, O 249, O 364, P 140. gradata, O 249, O 310, O 364, 0 366, P 141, U 203. illota, O 183, O 249, O 310, P 141, P 142. lactea, P 141, P 143, O 366. mutabilis, 24, 10" 200, 0 249, O 310, P 139. Pacifica, 24, 107, 153, 0 249, 0 310, P 138, P 139, P 296. pernoides, O 227, O 310, U 202. pholadiformis, 200, 0 278, 0 310. pusilla, O 249, P 142. solida, O 249, O 310, O 364, O 366, P 142, P 143, U 203. Tabogensis, 200, 0 278, 0 310, P 141. tetragona, O 366, P 139. truncata, O 183, O 310, O 359. vespertilio, O 249, O 310, P 140.

### Cadium

dentatum, O 238. ringens, O 238.

Cæcum: See also under sections Anellum, Elephantulum, and Fartulum. abnormale, P 316, X 420. annulatum, X 417, X 423. bimarginatum, X 421, X 440. Clarkii, X 443. elathratum, 39, P 322, X 428. var. compactum, O 256, P 322. Cooperi, 98, 141. corrugulatum, X 433, P 327. crebricinctum, 98, 141. diminutum, 186, O 4, O 166, 0 256, 0 272, P 321, X 427. dextroversum, P 328, X 433. (dextroversum, var.) Antillarum, X 433.

#### Cæcum

eburneum, 186, O 4, O 166, O 272, X 427. elegantissimum, X 429, X 430. (elegantissimum, var.) Searles-Woodii, X 430. elongatum, P 320, X 424. elongatum, var. semilæve, X 429. farcimen, X 431. firmatum, 186, O 4, O 166, O 256, O 272, O 357, P 319, P 320, P 321, P 324, P 326, X 427. firmatum, var., O 272, 273. Floridanum, X 428, X 429. glabriforme, O 366, P 327, P 328. glabrum, O 366, P 313, P 314, P 327, X 413, X 426, X 432, **X** 436. gracile, X 429.] gurgulio, X 426. heptagonum, P 319, X 422. imbricatum, X 422. imperforatum, P 321, X 413, X 425. incurvatum, X 434, X 436. insculptum, P 315, X 420. læve, 155, 186, O 272, P 314, P 325, P 326, X 431. laqueatum, 186, O 272, P 315, P 328, X 420. liratocinetum, 155, P 315, P 316, P 317, P 319, X 421. liratum, X 421. mamillatum, X 427, X 434, **X** 436. mamillatum, var. subulatum, X 434. mammillum, X 434. monstrosum, O 4, O 166, O 256, O 272, P 313, P 321, X 427. nitidum, X 439. obtusum, P 317, X 421. parvum, 186, O 256, O 273, P 323. plicatum, X 421.

#### 26 INDEX OF SPECIES. Cæcum Calliostoma pollicare, X 429, X 432. eximium, 40, €08, 272. pulchellum, P 312, P 313, X 415, filosum, 3, 13, 138. X 424. gemmulatum, 98, 139. pygmæum, 186, O 4 O 166, imbricatum, 196. O 256, O 273, P 321, X 427 Leanum, 24, 32, 40, 154, 191. quadratum, X 42%. ligatum, 3. regulare, X 417, X 423, X 428. lima, 24, 53, 154, 272. reversum, P 329, X 434. M'Andress, 32, 36, 40. Searles-Woodii, X 430. modestum, 3. ?var. semilæve, 39, O 256, P 319. splendens, 98, 139. var. subconicum, O 256. supragranosum, 98, 139. subimpressum, 108, P 320, variegatum, 89, 138. P 322, X 424. versicolor, 152, 272. subspirale, P 315, P 316, X 419. virgineum, 138. subquadratum, 39, X 433. Callista var. tenuiliratum, O 256. affinis, 30. teres, P 329, X 434, X 440. alternata, 30, 106. trachea, P 313, X 413, X 414, aurantia, 23, 106, 201. X 415, X 416, X 417, X 418, oallosa, 39, 57. P 424, X 425, X 426, X 427, chionma, 23, 27, 57, 106, 151, 201. circinata, 23, 30, 154. X 429. (?trachea, obsoletum, var.) concinna, 27, 30, 201. X 426. consanguinea, 201. tumidum, X 426. Dione, 57. undatum, 36, 186, 0 4, 0 272, lupinaria, 6, 23, 57. O 357, P 314, P 321, P 323, pannosa, 91, 170. (?pannosa, var.) puella, 23, 58, P 325, P 326, X 429, X 430, 104, 170, 211. X 431. vitreum, X 429, X 432. petechialis, 30. (?vitreum, var.) Clarkii, X 433. pollicaris, 58, 104, 210. Calcar prora, var. 104. erythrophthalmus, O 296, P 227. rosea, 23, 57, 58. olivaceus, O 238, P 541. semilamellosa, 153, 154. Melchersi, O 238, P 227, P 541. spinosissima, 154. stellaris, O 238, P 541. tortuosa, 23, 30. Calliostoma vulnerata, 151. Callochiton (?lima, var.) sequisculpta, 154, . Elenensis, 198. 272. interstinctus, O 317, O 348. annulatum, 13, 27, 138. Antonii, 36, 191. pulchellus, 198, 267, O 317. canaliculatum, 6, 13, 23, 27, Callopoma fluotnatum, 153, O 253, O 348, 113, 138. castaneum, 3. P 223, Q 234. costatum, 13, 19, 23, 25, 27, 138. (fluotuatum, var.) depressum, dolarium, 13, 138. 41, O 253, O 288, P 223, Q 234.

### Callopoma

fluctuosum, 27, 192, O 224, O 253, O 320, P 223, P 224. Fokkesii, 31, 108, 151, O 320. phasianella, O 320 [vide 550]. saxosum, 24, 192, O 282, O 288, O 320.

tessellatum, 31, 151, 192.

### Calypeopsis

aurículata, O 3, P 290.
Byronensis, O 3.
hispida, O 3, O 275, P 290.
imbricata, P 287.
lignaria, O 3, O 184, P 290.
maculata, O 3, P 290.
quiriquina, O 3, O 190, P 291.
rugosa, O 3, O 190, P 287, P 291.
serrata, O 184.
tenuis, O 3, O 184, P 290.
tubifera, 61.

#### Calyptræa

aberrans, 37, 195. Adolphei, 0 172. alveolata, 51. amygdalus, O 204, O 254, P 278. Araucana, P 265. arenata, O 184. aspersa, 37, 195. auricularis, P 287, P 289. auriculata, O 190, P 287, P 290, P 292. Byronensis, O 255, P 291. cepacea, 37, 195, O 235, O 239, O 255, O 275, O 323, P 295, P 546. cinerea, 48. conica, 37, 195, O 239, O 275, P 265, P 266, P 545. cornea, P 295. corrugata, 52, O 184, O 323. dentata, 195, O 236, O 255, O 275, P 287, P 538. dilatata, P 265. dorsata, P 273. echinus, O 2, P 268. equestris, P 295.

### Calyptræa

excavată, O 184, P 274. !extinctorum, 47, 0 3, 0 174, O 236, P 267, P 287. fastigiata, O 209. foliacea, P 272. gemmacea, O 204, P 288. hispida, 79, 195, O 255, O 275, O 283, O 284, P 290, P 291. hystrix, O 2, P 268. imbricata, 47, 48, 195, O 184, O 190, O 236, O 275, P 287, P 288, P 291, P 292, P 538 P 551, T 169. ?imbricata, Broderipii, var. P 292. !!imbricata, Cumingii, var. P 287, P 292. incurva, P 276. intermedia, P 292. lævigata, P 267. Lamarckii, O 236, O 239, O 254, P 266, P 538, P 545. Lessonii, O 2, P 280. lichen, O 254, P 265. lignaria, O 184, O 190, O 255, P 290, P 291, P 292. lorica, P 292. maculata, 195, O 255, O 275, P 290, P 291, T 167. mamillaris, O 190, O 230, P 266, P 267, P 292. marginalis, O 184. perforans, O 204, O 255, P 281. peziza, O 255. pileiformis, O 212. pileolus, P 292. planulata, 37, 195, O 275, 0 318. quiriquina, O 190, O 255, P 291, P 292. radians, P 264, P 265. radiata, 195, P 275, P 291. regularis, 195, O 230, O 233, O 254, O 276, P 266. rudis, O 184, P 292, P 295.



Calyptræa rugosa, 48, O 3, O 190, O 204, O 236, O 255, O 275, P 287, P 290, P 291, P 292. serrata, O 184. sordida, P 267. spinosa, 47, 48, O 174, O 239, O 352, P 290, P 291, P 292, P 546. squama, O 2, O 184, P 280. striata, U 205. strigata, P 272. tenuis, O 184, O 255, P 290, P 291, P 292. tortilis, 51. trigonalis, O 224. trochiformis, O 190, P 265. tubifera, O 3, O 204, O 255, P 290, P 292. umbrella, 195, O 276, P 290, P 292. unguis, 37, 196, O 276, P 267. varia, O 184, O 323, O 360, P 295. Campylæa sportella, 157. Cancellaria acuminata, O 181, O 329. affinis, 35, 183, O 271. albida, O 206, O 329. arctica, O 223. bicolor, P 381. bifasciata, O 265, O 329. brevis, O 230, O 294, O 329, P 380, P 381. buccinoides, O 181, O 217, O 329. bulbulus, 24, O 181, O 329. bullata, O 181. candida, 27, O 235, O 329. cassidiformis, 27, O 181, O 235, O 238, O 329, O 352, P 543. Capsa

chrysostoma, O 181, O 294,

clavatula, 24, O 181, O 230, O 271,

0 329, 0 360.

0 329.

Cancellaria corrugata, O 206. costata, P 380. costellifera, O 217. Couthouyi, O 217. orenata, O 206, O 329. decussata, 24, O 181, O 271, 0 329. elata, O 206, O 329. funiculata, 51, 0 206, 0 329. gemmulata, O 181, O 329. goniostoma, 24, 27, 36, 152, 183, 0 181, 0 233, 0 235, 0 238, 0 258, 0 271, 0 294, 0 329, P 380, P 381, P 435, P 543. hæmastoma, O 181, O 329, O 360. indentata, O 181, O 206, O 329. lyrata, 51. mitriformis, 24, O 271, O 329. modesta, 114, 146, 245. obesa, 27, O 181, O 235, O 352, O 329, P 380. oblonga, O 265. ovata, P 380, P 543. pulchra, O 271. pygmæa, 36, 183, O 271, O 329. reticulata, 61, O 192. rigida, P 381. solida, 27, O 181, O 235, O 271, 0 329, 0 352. tessellata, 24, O 271, O 329. uniplicata, O 182, O 271, O 329. urceolata, 35, 152, 183, 206, 0 192, O 238, O 258, O 329, P 380. ventricosa, O 206, O 329. viridula, O 217. Cantharus gemmatus, P 516.

ringens, 518.

deflorata, 53. lævigata, O 364, P 42.

sanguinolentus, P 517.

altior, 202, O 182, O 279.

Braziliensis, O 364.

### Capulus

militaris, P 300. mitrula, P 297, R 3. subrufus, R 4.

#### Cardita

affinis, 201, O 182, O 229, O 232, 0 234, 0 236, 0 247, 0 278, O 282, O 297, O 306, P 84, P 85, P 539. arcella, 14. borealis, 9, 70, 0 210, 0 219, 0 221, 0 223. Californica, O 232, O 234, O 236, 0 287, O 352, P 84. corbis, 128. crassa, O 178, O 306. Cuvieri, 10, 0 181, 0 208, 0 laticostata, 201, O 182, O 278, 0 306. incrassata, O 287, O 306, O 359. Michelini, 10, 14. modulosa, 14, O 278. monilicosta, 118, nodulosa, O 278. occidentalis, 17, 80. planicosta, 75. radiata, 201, O 182, O 278, O 306. spurca, 0 221. subtenta, 17, 165, O 367. turgida, 14.

### Cardium

aculeatum, 154, O 285. alabastrum, O 247, O 307, P 94, P 531. arenatum, P 93. asperum, 0 364. Belcheri, O 175, O 297, O 307. biangulatum, 27, O 175, O 187, 0 229, 0 307.

varia, O 181, O 306, O 359.

0 210, 0 213, 0 306.

ventricosa, 17, 80, 91, 0 209,

variegata, 128, 280.

volucris, O 229.

#### Cardium

blaudum, 14, 17, 49, 70, 91, 128, 0 210, 0 212, 0 213, 0 307, 0 348. boreale, O 175. bullatum, O 364. Californianum, 13, 14, 17, 49, 119, 0 197, 0 203, 0 212, O 213, O 219, V 217. Californiense, 14, 17, 70, 91, 128, 0 197, 0 203, 0 219, 0 221, 0 223, 0 232, 0 234, 0 283, 0 307, 0 347. carneosum, P 40. centifilosum, 97, 128. consors, 23, 27, 106, 153, O 187, 0 234, 0 282, 0 307, 0 364. corbis, 5, 13, 17, 91, 128. costatum, 45, P 95. cruentatum, 21, 78, O 227, O 284, O 307, O 352, U 201. Cumingii, O 183, O 307. Dionæum, O 175. discors, 60. elatum, 153, O 232, O 247, O 307, O 351, O 352, O 364, P 91, V 218. Elenense, P 91, U 201. Gabbii, 119. gemmatum, O 229. graniferum, 25, 30, 154, 201, 322, 0 175, 0 187, 0 229, 0 248, O 278, O 307, P 85, P 95. Grænlandicum, 47, 70. Icelandicum, O 210. Indicum, 45. O 288. Laperousii, 14, O 203, O 307. laticostatum, O 247, P 92. linteum, 75. lucinoides, O 248, P 96. luteolabrum, 13, 21, 128, O 197, O 227, O 307, O 351, U 201. maculatum, 45, O 282, O 285. maculosum, 45, O 229, O 285, 0 307. magnificum, O 187.

# Cardium modestum, 75, 97, 128.

Mortoni, U 201, V 218. muricatum, O 175, O 236, O 247, Cassidaria O 364, P 93, P 539. Nicolleti, 75. Nuttallianum, O 192. Nuttallii, 4, 13, 14, 26, 71, 86, 0 197, 0 203, 0 213, 0 219, 0 223, 0 232, 0 241, 0 284, O 307, O 347, O 351, V 217. obovale, 23, 201, O 229, O 278, 0 307. Panamense, O 178, O 183, O 232, O 234, O 307, P 92 planicostatum, 38, 201, O 183, O 278, O 307. procerum, 14, 23, 106, 152 153, 201, O 178, O 183, O 236, O 247, O 278, O 307, P 91, P 92, P 539. pseudofossile, 14, 17, 49, 70, 128,

O 247, P 94. punctulatum, O 247, P 93.

quadragenarium, 13, 21, 86, 128, O 197, O 307, V 217. radula, O 175, O 236.

rastrum, O 247, O 278, P 93. rotundatum, O 247, O 307, P 531. senticosum, 23, 106, 201, O 247,

O 278, O 307, P 93. serratum, O 364. subelongatum, 14.

substriatum, 78, O 197, O 232, O 307, O 351, U 201, V 218. triangulatum, O 247, P 94. manthocheilum, 128, O 197, O

#### Carinea

emarginata, 24, 176. gibbosa, 176.

227, O 232, U 201.

# Carinifex

Newberryi, 161.

# Carocolla

Ilaydiana, O 265. labyrinthus, O 165.

#### Carocolla

quadridentata, O 180. uncigera, O 290.

setosa, O 261 O 367, P 455. Cassidulus patulus, P 501.

#### Cassis

abbreviata, 35, 181, O 238, O 270, 0 292, 0 297, 0 337, 0 364, P 543. centiquadrata, O 171, O 292. coarctata, 181, O 171, O 174, 0 188, 0 234, 0 235, 0 238, 0 243, 0 270, 0 282, 0 294, 0 337, 0 350, 0 352, 0 360 O 364, P 543. corrugata, 7. doliata, O 171, O 292. granosa, O 238. inflata, 181, O 238, O 364, P 543. lactea, O 270, O 292.

# Masseuse, 10, O 188.

ringens, 7, O 174, O 238. tenuis, O 188, O 337, O 360. testiculus, O 171, O 364.

# Castra

Turcica, 48.

# Cavolina

crassicornis, O 173. subrosacea, O 173. telemus, 98, 107, 132.

# Cellepora

areolata, 34, 256. cyclostoma, O 244, O 298, P 5. papillæformis, O 244, O 298, P 5. Cerithium

> adustum, O 189, O 256, O 272, O 293, O 325, O 366, P 333, P 334. alboliratum, 24, 0 256, O 325, P 336.

assimilatum, O 272, O 289, P 445.

bimarginatum, 185, O 272. Californianum, O 212.

#### Cerithium

corallium, O 170. famelicum, 36, 185, O 256, O 272, O 282, P 334, P 335. filosum, 17, 185, 0 209, 0 212, 0 295. fragraria, 7, 0 170 Gallapaginis, 32, 63, 185, 0 189, O 256, O 272, O 325, P 338. gemmatum, 0 272, P 339. granosum, 7, 0 170. Guinaicum, P 333. Hegewischii, O 295, P 345. interruptum, 24, 32, 36, 45, 63, 108, 155, 185, 0 189, 0 226, 0 238, 0 256, 0 272, 0 325, O 360, P 337, P 338, P 542. iostoma, P 345. irroratum, 17, 32, 36, 45, 185, 0 189, 0 209, 0 256, 0 272, O 283, O 325, P 337. Largillierti, P 343. lima, O 170, O 222 literatum, O 170. maculosum, 7, 24, 27, 108, 185, 0 189, 0 230, 0 238, 0 256, 0 272, 0 282, 0 293, 0 325, O 360, O 366, P 333, P 339, P 340, P 542. mediale, 0 367. var. mediolæve, 24, 35, 108, 185, O 256, P 334. Menkei, P 338. Montagnei, O 190, O 239, P 342, P 343, R 345, P 542. musicum, 7, 0 170, 0 171, O 256, O 325, P 335. nebulosum, O 189, O 256, O 325, P 333. neglectum, 185, O 272. obesum, 17, 32, 185. ocellatum, 45, O 189, O 236, 0 238, 0 256, 0 296, 0 325, O 366, P 337, P 536, P 542. Pacificum, 48, 185, O 170, O 272,

0 325.

31 Cerithium pauperculum, 186, O 272. Peruvianum, P 442. pulchrum, 186, O 256, O 272, P 343. Reevianum, 186, O 256, O 272, P 343. reticulatum, 6. sacratum, O 209, U 206, V 226. stercusmuscarum, 17, 27, 32, 36, 108, 152, O 170, O 209, 0 233, 0 236, 0 238, 0 256, 0 272, 0 282, 0 325, 0 360, O 366, P 337, P 339. terebellum, O 289. trilineatum, O 289. umbonatum, O 256, P 335. uncinatum, 24, 63, 108, 151, 185, O 256, O 272, O 285, O 325, O 364, P 334, P 335. validum, 186, O 163, O 257, O 272, P 344. varicosum, 7, 48, 0 170, 0 189, O 190, P 343, P 344. vulgatum, O 170. Cerithidea albonodosa, 153, 186, O 228, O 283, O 325, O 351, U 205. Californica, 141. fuscata, 79, O 228, O 233, P 345. Lavalleana, O 364. Mazatlanica, 108, 141, 186, 0 233. Montaguei, 24, 27, 151, 186, 0 230, 0 256, 0 272, 0 325; P 342, P 343.

pulchra, O 325. pullata, 141, 151, O 325, O 351. Reeviana, O 325. sacrata, 23, 79, 141, O 200, O 228, . 0 230, 0 233, 0 325, 0 351, P 345, U 206, V 226. (!sacrata, var.), fuscata, U 206. solida, O 230. valida, O 230, O 325.

32 INDEX OF SPECIES. Cerithidea Chama varicosa, 7, 24, 186, 208, O 170, 0 190, 0 230, 0 233, 0 272, 0 295, 0 325, 0 364. chionma, 178. Ivaricosa, var. Mazatlanica, O 257, P 344, U 206. 0 277, 0 307. Cerithiopsis crassicostata, 10. assimilata, 99, 110, 146, 155, 274, O 260, O 335, O 364, P 445. bimarginata, 274, O 335. cerea, O 260, O 335, P 443, P 445. columna, 99, 114, 146, 245. convexa, O 260, O 335, P 44. decussata, O 260, O 335, P 445. filosa, O 335, O 348. P 87, P 549. fortior, 23, 146, 287. intercalaris, 274. munita, 114, 146, 245. neglecta, 185, O 336. paupercula, O 336. pupiformis, O 260, O 335, P 443. purpurea, 23, 146, 287. Borex, O 260, P 335, P 444. terebella, O 364, P 445. lobata, 11, 71. trilineata, P 445. tubercularis, 169, 186, O 366. ?tuberoulata, 23, 114, 146, P 90. tuberculoides, 32, 36, 110, O 260, O 335, O 366, P 442, P 443. !tuberculoides, var. albonodosa, rugosa, O 234. O 260, P 443. Cereus conglomeratus, 4. P 89, P 90. Cerostoma squalida, O 178. var. Burnettii, 72. venosa, O 232. foliatum, 13, 48, 72, 149, 169, Chelyconus puncticulatus, P 404. monocéros, 13, 149, 151, 152. purpurascens, P 402. monodon, 83, 149, O 345. regalitatis, P 403. Nuttallii, 13, 27, 149, O 201, Chelysoma O 345, O 349, V 229. MacLeayanum, O 176 Chama Chemnitsia Broderipii, P 89. Adamsii, 36, 110.

Buddiana, 26, 30, 38, 106, 200, 247, O 277, O 307, P 89. corrugata, 27, 38, 154, O 184, Delessertii, P 549. echinata, 9, 30, 38, 106, 200, O 178, O 184, O 234, O 247, O 277, O 307, P 87, P 549. exogyra, 11, 71, 106, 127, O 232, O 247, O 307, O 349, O 351, O 352, O 353, P 90, V 217. frondosa, 9, 23, 106, 152, O 178, 0 197, 0 232, 0 282, 0 306, (?frondosa, var.) fornicata, 38, 200, O 247, O 277, P 89. frondosa, var. Mexicana, 200, 0 178, 0 197, 0 247, 0 307, O 352, O 353, O 364, P 87, P 89, P 548, V 217. imbricata, 63, O 184, O 307. Janus, O 186, O 307, O 359. Mexicana, 30, 38, O 232. Panamensis, O 186, O 307, P pellucida, 22, 127, 170, O 197, O 232, O 307, O 351, V 217. producta, 27, O 184, O 307. spinosa, 23, 27, 97, 106, 128, 0 208, 0 247, 0 307, 0 359,

#### Chemnitzia

aculeus, 187, 188, O 260, O 273, O 335, P 427, P 428. acuminata, 36, 187, O 273. affinis, 33, 36, 187, U 260, U 273, O 335, P 429. fvar. aurantia, 23, 89, 145, 315. bicarinata, T 171. bittiformis, T 171. cælata, 24, 294. cancellata, 0 260, C.-B.- Adamsii, O 260, O 335, P 427. chocolata, 99, 145, 316. clathratula, 36, 187, O 273, P communis, 36, 187, 190, O 273, P 419, T 170. crebrifilata, 23, 285. Cumingii, T 170. flavescens, 110, O 260, O 334, gibbosa, O 260, O 334, P 430. gracillima, 36, 188, O 260, O 334, P 431. gracilior, 187, O 273, O 335, P 431, P 432. intermedia, 0 260. major, 36, 187, O 273, O 335. marginata, 187, O 273. muricata, O 260, O 334, P 428. Panamensis, 33, 36, 110, 187, 188, 0 260, 0 273, 0 335, P 427. paucilirata, O 260. polyzonata, T 170. prolongata, 110, O 260, O 334, P 429. reticulata, P 433. rubrofusca, T 171. scalaris, P 414. similis, 33, 36, 188, O 260, O 273, O 335, P 428. striosa, 188, O 273, O 335. ?var. stylina, 23, 145.

3

#### Chemnitzia

subangulata, O 260. tenuicula, 23, 145, O 228, O 230, O 334, O 349, U 207. (?tenuicula, var.) subcuspidata, 99, 145. tenuilirata, 154, O 260, O 334, P 433. terebralis, O 260, O 334, P 432. torquata, 23, 89, 90, 145, 286, 0 228, 0 230, 0 334, 0 349, U 207. (!torquata, var.) stylina, 286. tridentata, 23, 89, 145, 315, 316. turrita, 36, 188, 190, O 273, O 335, P 429, T 171. undata, 33, 36, 187, O 260, O 334, P 431, P 432. unifasciata, O 260, O 335, P 433. Vancouverensis, 90, 145. virgo, 23, 145, 286, 294. Chione amathusia, 23, 27, 152, 154, 201, O 236, O 247, P 71, P 72, P 80. astartoides, 39. badia, 58. var. bilineata, 106. Californiensis, 7, 127, 152, O 197, V 216. callosa, 13, 39, 127, 152, O 197, O 281, V 216. cancellata, 13, 127. Columbiensis, O 247, P 75. cremifera, 201, O 247, P 74. discors, P 77. distans, O 247, P 74. excavata, 13, 127, O 197, V 216. fluctifraga, 22, 39, 127, 152, gnidia, 27, 151, 152, O 247, P 71, P 72, V 215. gnidia, var. P 72. grata, P 77. histrionica, O 247, P 77. var. lilacina, 106.

Lordi, 91.

34 INDEX OF SPECIES. Chione Chiton lupanaria, P 67. dispar, 37, 198, 261, 266, O 181, neglecta, 23, 106, 151, O 192, 0 276. Elenensis, O 180, O 318. Nuttalli, 127, O 197, V 216. Eschscholtzii, 19, O 214, O 223. -var. 0 281. fastigiatus, O 288. pulicaria, var. 27, 106, 153. flavescens, O 252, O 317, P 198. giganteus, 18, 9 215. ruderata, O 192. Goodallii, O 180. simillima, 13, 22, 127, 151, O 197, V 216. Hartwegii, 40, O 287, O 318, squalida, P 64. O 349, Q 231, Q 232. Hindsii, 92, O 229. straminea, V 215. hirundiformis, O 181, O 187, succinota, 13, 22, 25, 26, 27, 40, 127, 151, 152, 154, 322. 0 318, 0 360. sugillata, 23, 38. incarnatus, 35. undatella, 106, P 75. insignis, O 208, O 214. Chioræra interstinctus, 16, 0 210. leonina, 95, O 210, O 213, O 313. lævigatus, 92, O 285, P 191. Chironia lignarius, O 209. Laperousii, O 202, O 203. lignosus, 16, 19, 84, O 209, O 318, Chiton 0 348. limaciformis, O 180, O 252, P achates, 72. acutus, 13, O 198, O 318, Q 232, ¥ 221. lineatus, 9, O 208, O 214, O 223, albolineatus, O 175, O 290, P 191. 0 229, 0 318. lividus, 19, 0 215, 0 223. albus, 71, 72. amiculatus, 19, O 214, O 223. Loochooanus, O 175. armatus, O 198. luridus, 198, 276, O 318. articulatus, O 178, O 233, O 290, Magdalensis, O 206, O 233. P 190, Q 232. marginatus, 92. Blainvillei, 72, O 233. Merckii, 19, 40, O 215, O 223. Brandtii, 19, 0 215, 0 219, 0 Mertensii, 19, 0 215, 0 224. Montereyensis, 16, 40, O 287, Californicus, 13, O 198, O 229, O 318, O 349, Q 231. 0 318. muricatus, 18, 0 215. chlamys, O 214. muscosus, 16, 72, 84, O 198, clathratus, 267, O 276, O 318. 0 209, 0 229, 0 317, 0 348, Collei, O 229. V 221. Columbiensis, O 181, O 318. Nuttallii, 13, O 198, O 318, concinnus, 72. O 349, Q 231, V 221. consimilis, 13, O 198, O 297, ornatus, 16, O 198, O 229, O 318, O 318. O 349, Q 232, V 221. crenulatus, O 187. Pallasii, 19, 0 214, 0 219, 0 223. Cumingii, O 180. patulus, 38. dentiens, 16, 92, O 209, O 318, proprius, 0 290. 0 348. pulchellus, 38, 198, O 277.

#### Chiton

regularis, 40, 0 287, 0 318, Q 232. retusus, O 180. sanguineus, 63, O 364, P 194. scaber, O 229, O 290, O 317. scabriculus, O 180, O 318. scrobiculatus, 19, 0 215, 0 224. setiger, 0 214. setosus, 18, O 178, O 180, O 214, 0 215, 0 318. Simpsonii, O 208. Sitchensis, 19, 0 192, 0 214, 0 223, 0 229, 0 290. Stelleri, 19, O 194, O 214, O 223, 0 229. Stimpsonii, 72. Stokesii, 38, 153, 198, 266, O 180, 0 229, 0 277. submarmoreus, 84, 214, 0 219, 0 223. sulcatus, 9, 0 187. textilis, 35. tunicatus, 9, 84, O 178, O 192, 0 214, 0 223, 0 288. vespertinus, 16, 0 210. vestitus, O 175, O 223, O 296. Wosnessenskii, 19, 92, 0 214, 0 318.

#### Chlorostoma

aureotinetum, 28, 138, 152. brunneum, 27, 138. funebrale, 19, 23, 27, 40, 49, 79, 113, 138, 170, 0 287, 0 297. gallina, 138, 152. maculosum, 21, 0 227. marginatum, 79. moestum, 49, 170. nigerrimum, 28, 138. Pfeifferi, 23, 27, 138. var. pyriforme, 138. rugosum, P 233. - var. 0 283. var. subapertum, 113, 138.

#### Chondropoma

rubicundum, 45.

### Choristodon

typicum, 29, O 244, O 364, P 447, P 529.

#### Chorus

Belcheri, 60, 149, 151.

#### Chatopleura

muscosa, 16. dentiens, 16.

### Chrysallida

acuminata, O 273, O 334. angusta, 104, 219. cancellata, O 364. cincta, 99, 145. olathratula, 36, 187, O 259, O 273, O 334, P 424. clausiliformis, O 260, O 334, P 367, P 369, P 370, P 426. communis, 36, 110, 187, 0 273, O 334, O 357, O 364, P 408, P 419, P 421, P 423. convexa, O 260, O 334, P 422. orebristriata, T 170. effusa, 36, 39, 187, O 259, O 334, P 422. fasciata, 39, O 259, O 334, P 417, P 423. indentata, O 260, O 334, P 425. marginata, O 273, O 334, P 423. nodosa, O 259, O 334, P 369, P 417. oblonga, O 259, O 334, P 418. ovata, O 259, O 334, P 417, P 418. paupercula, 36. Photis, O 260, O 334, P 425. pumila, 99, 145. Reigeni, O 259, O 334, P 422. rotundata, O 259, O 334, P 418, P 419. telescopium, 36, 39, 187, O 259, O 334, P 418, P 421, P 422.

# Chrysodomus

antiquus, 69, 70, 83, 166, 183, 0 343. Baeri, O 343. Behringii, O 343.

#### Columbella

fuscata, 25, 111, 151, 180, O 171, 0 181, 0 210, 0 235, 0 238, 0 262, 0 269, 0 283, 0 294, 0 341, P 489, P 492, P 543. fuscata, var. 28. fusiformis, 0 206. gausapata, 17, 84, 148, O 210, O 341, O 348. gibberula, 180, O 231, O 269. gibbosa, O 171, O 234, O 262, O 269, P 489, P 491. Gouldiana, 21. Gouldii, 53, O 231. gracilis, 180, 0 269. guttata, 53, 180, O 181, O 231, O 262, O 269, P 487. hæmastoma, 111, O 181, O 192, 0 231, 0 269, 0 294, 0 341, 0 361. Haneti, 62. harpiformis, 61, 181, O 181, O 230, 0 231, 0 236, 0 238, O 269, O 341, P 537, P 543. Hindsii, 23, 114, 148. humerosa, 155, 274. labiosa, 25, 48, O 269, O 283, 0 341. Iactea, 53. lanceolata, O 181, O 190. lentiginosa, O 206. ligata, O 341. livida, O 181, O 341. lyrata, 180, O 181, O 269. maculosa, O 181, O 231, P 513. major, 25, 52, 111, 180, O 171, 0 181, 0 210, 0 231, 0 236, O 262, O 269, O 341, P 489, P 491, P 492, P 507, P 537. maura, 0 181. meleagris, O 262, O 269, O 294, P 492. mercatoria, O 222. fmillepunctata, var. 25. mitriformis, O 177, O 262, P 487. modesta, 180, O 270.

#### Columbella

mœsta, 181, O 270. nasuta, O 238, O 341, P 543. nigricans, 181, O 186, O 231, 0 270. Pacifica, 53. pallida, O 235, P 535. pardalis, O 341. parva. 35, 181, O 231, O 270. pavonia, O 206. paytalida, O 262, O 294, P 489. procera, O 181, O 341. pulcherrima, O 181, O 341. pulchrior, 181, O 270. punctata, P 487. pusilla, 53. pygmæa, 181, O 181, O 192, O 226, O 270, P 510. pyrostoma, O 181. Reevei, 53, 111. rorida, 53. rugulosa, O 186. rugosa, 181, O 181, O 231, O 270. rustica, O 269, O 294, P 489, P saturalis, 59, 61, O 269. scalarina, O 181, P 505. solidula, III. Sowerbyi, O 270. spadicea, 53, O 225, P 535. Sta.-Barbarensis, 21, 53, 111, 0 228, 0 231, 0 341, 0 349. strombiformis, 48, 181, O 171, O 174, O 178, O 192, O 210, 0 234, 0 236, 0 262, 0 270, O 341, P 490, P 537. strombiformis, var. 0 262, 0 269, P 489. sulcosa, 53, 185, O 272. Terpsichore, O 226, O 238, O 263, P 508, P 543. tessellata, 35, 181, O 270. tæniata, 20, 53, 260, O 225, P 535. triumphalis, 10, O 268. turrita, 181, O 181, O 270.

#### Columbella

uncinata, 25, 53, 155. unicolor, O 181, O 342, O 361. valga, 84. varia, 181, O 181, O 270, P 507. varians, 155, O 270, O 341, O 361. venusta, 53.

# vexillum, 53.

Colus

#### arctatus, 77.

Concholepas antiquata, P 297, R 3. Peruviana, O 231.

subrufa, R 4.

#### Conella

cedo-nulli, 28, 111. coniformis, 25.

#### Conovulus

myosotis, P 112.

#### Conus

abbreviatus, II. achatinus, O 228, O 236, O 259, P 403, P 537, U 206. archon, O 182, O 208, O 333. arcuatus, 9, 27, 46, 0 176, 0 259, O 333, P 402. arenatus, O 243, O 259, P 404. brunneus, 110, O 184, O 270, 0 292, 0 333, 0 360. Californicus, 21, 23, 27, 144, 0 205, 0 332. cinctus, O 170, O 333. cœlebs, O 205. comptus, O 228, O 230, O 259, 0 332, P 402, U 206. concinnus, O 285, O 292, O 297, 0 332. Cumingii, 46. deperditus, O 170. diadema, O 184, O 333, O 360. ebræus, 7 emarginatus, 152. ferrugatus, O 285, O 332,

352.

# Conus

Largillierti, 58. lineolatus, O 170, O 270, O 333. Lorenzianus, 46, O 294, O 333. Luzonicus, var. O 184, O 333, O 360. Mahogani, 9, 24, 154, O 270,

O 282, O 292, O 333.

Mauritianus, 46.

Mediterraneus, O 222.

minimus, O 291, O 360.

minimus, var. O 333.

nux, 21, 24, 27, 110, O 182, O 259, O 270, O 332, O 360, P 405.

omaria, O 238, P 544.
Orion, O 182, O 333.
var. papillosus, 46.
patricius, O 205, O 333.
perplexus, 46.
Philippii, 59.
princeps, 7, 58, 110, O 170, O
183, O 233, O 238, O 333,
O 352, P 544.

pulchellus, O 187. puncticulatus, 9, 27, 46, 154, O 238, Q 259, O 332, P 404, P 544.

Purpurascens, 24, 27, 32, 110, 181, O 176, O 182, O 228, O 230, O 259, O 270, O 332, O 364, P 402, P 403, U 206. purpurascens, var. O 259, P 403. purpureus, O 236.

28

40 INDEX OF SPECIES. Corbula Conus pusillus, 9, 21, O 228, O 230, fragilis, O 207, O 300. O 332, U 206. gibbosa, O 175, O 347. var. pusillus, 110. luteola, 97, 123. pustolosus, 46. marmorata, O 207, O 300. pyriformis, O 292, O 333. nasuta, 23, O 228, O 300. ravus, 21, 144, O 228, O 230, nuciformis, 23, 154, O 183, O O 332, O 333, O 349, U 206. 300. regalitatis, 32, 110, 181, O 184, obesa, 204, O 207, O 300. 0 236, 0 259, 0 270, 0 282, ovulata, 33, 154, 204, O 183, O 333, P 403. 0 228, 0 244, 0 280, 0 300, regius, 7, 58, O 170, O 270. P 23. regularis, 24, 27, O 238, O 259, polychroma, 20, 39, 205, 0 226, O 270, O 292, O 333, O 352, 0 228, 0 300, U 198. P 401, P 544. pustulosa, 39, 204, O 244, O 300, regularis, var. 46, O 176. P 22. reticulatus, 152. radiata, O 207. scalaris; 7, 10, 46, 110, 0 170, rostrata, O 175. O 259, P 406. rubra, 39, 204, O 280, O 300. scaphoides, P 547. terebellum, O 205. tiaratus, 46, O 182, O 292,O 360. speciosa, O 207, O 300. tornatus, 9, 110, O 188, O 333. Taheitensis, O 280. trochulus, O 235. tenuis, 23, 204, O 183, O 228, varius, O 187, O 360. 0 244, 0 280, 0 300. virgatus, var. 46. fustulata, O 236, P 539. vittatus, O 270, O 292, O 333. ventricosa, O 584, O 300. Ximenes, 9, 46, O 177, O 333. venusta, 73. Zebra, 46. Coralliophila Cooperella Californica, O 287. scintillæformis, 97, 125. madreporarum, 63. Corniculina convexa, 154, 164, O 287. Ehrenbergii, X 419. ventricosa, 164. Cornuoides Corbula major, X 416, X 425, X 426. alba, O 224, O 228, O 244, P 534, minor, X 426, X 436. Coronaxis bicarinata, 23, O 183, O 224, O nux, P 405. 228, O 244, O 280, O 281, O Crania 300, O 364, P 21, U 199. radiosa, 55. biradiata, 20, 23, 39, 123, 204, Crassatella 205, 0 183, 0 244, 0 280, alta, 75. 0 300, P 22. collina, 81. Boivinei, O 300. Esquimalti, 91. carinata, O 224. Guadalupensis, P 549. Cubaniana, O 364, gibbosa, 23, 106, 155, 204, 306, Diegoana, 75. 0 280, 0 297.

#### Crassatella

Martinicensis, O 364, P 549. Pacifica, 101. undulata, O 297. Uvasana, 75. varians, 106.

#### Crassispira

aterrima, P 393. incrassata, P 392. luctuosa, P 397. rudis, P 393. zonulata, P 395.

#### Cremides

Barbadensis, P 215. Peruviana, P 219. rugosa, P 216.

#### Crenella

coarctata, 50, 107, O 226, O 234, 0 248, 0 309, 0 359, P 123. decussata, 97, 130, 169, 170,

discrepans, O 309. inflata, 39, 104, 211.

# Crepidula

aculeata, 24, 27, 47, 51, 69, 92, 108, 140, 196, 0 2, 0 190, 0 200, 0 235, 0 236, 0 254, 0 282, 0 323, 0 353, 0 363, 0 365, P 268, P 269, P 283, P 292. aculeata, var. 0 276, V 225. Adolphei, O 254, P 272. adunca, 23, 25, 27, 31, 37, 51, 79, 98, 108, 140, 197, 0 174, 0 206, 0 209, 0 212, 0 230, 0 236, 0 254, 0 276, 0 323, P 263, P 275, P 277. arcuata, O 254, P 272. arenata, 27, 51, 151, O 184, 0 282, 0 323, P 275. arenata, var. 151. auriculata, P 289. var. bilobata, 17, 52, 140, 0 3, 0 254. calceolina, 0 276. Californica, 52, O 2, O 200, O 254, P 268, V 225.

Crepidula calyptræformis, P 270. capensis, O 209, P 268. cerithicola, O 254, O 276, P 278. contorta, O 239, O 254, P 278, P 545. costata, 0 2, 0 236, 0 239, 0 254, P 268, P 537, P 545. depressa, O 254, P 272. dilatata, 51, 0 172, 0 190, 0 254, O 323, O 366, P 272, P 285, P 292. dilatata, var. O 190. dorsata, 13, 17, 23, 52, 92, 140, O 254, P 273, P 274, P 288. echinus, 52, O 254, O 276, O 363, P 268. excavata, 20, 24, 51, 98, 108, 140, 152, 196, 0 230, 0 235, O 254, O 276, O 364, P 274. – var. 108. explanata, 27, 52, 140, 0 200, O 204, O 228, O 233, O 255, O 323, P 281, P 282, U 205, **V** 225. exuviata, 140, 0 200, 0 228, O 233, O 255, P 281, U 205, V 225. fimbriata, 17, 51, 140. foliacea, O 190, O 254, P 272, P 292. fornicata, 20, P 282, P 286. Goreensis, O 239, O 369, O 365, P 280, P 284, P 286, P 545. grandis, 20, 25, 70, 76, 169, 322, 0 216, 0 223, 0 323. hepatica, 196, O 236, O 254, O 276, P 276, P 278, P 537, V 225. hystrix, 52, O 363, P 269, P 293. — var. 69. incurva, 24, 37, 52, 79, 154, 196, O 190, O 230, O 236, O 254, 0 276, 0 284, 0 323, 0 352, P 276, P 277, P 279, P 292. incurva, var. P 275.

incurvata, O 175.

Crepidula Italica, O 255, O 276, P 284. Lessonii, 51, 140, 196, 197, O 190, O 276, O 358, P 269; P 282, P 293. lineolata, P 272. lingulata, 17, 52, 92, 140, O 209, 0 323. lirata, 52. marginalis, O 184, O 324, P 292. minuta, 17, 20, 0 200, 0 216, O 223, O 323, V 225. nautiloides, 51, O 254, P 272. navicelloides, 17, 20, 25, 52, 140, O 200, P 281, V 225. navicelloides, var. O 200. nives, 26, 37, 154, 196, 197, O 2, O 190, O 255, O 276, O 323, O 358, P 269, P 270, P 272, P 279, P 281, P 282, P 285, P 286, P 292, P 293, U 205, **V** 225. nives, var. 0 190, 0 239, 0 276. nummaria, 17, 52, 140, O 200, O 209, O 212, O 323, V 225. onyx, 27, 37, 52, 108, 152, 196, 0 190, 0 200, 0 204, 0 230, O 235, O 254, O 276, O 278, O 323, O 364, O 366, P 272, P 276, P 277, P 292, V 225. osculans, 31, 37, 197, O 276, pallida, O 254, P 272. Patagonica, O 190, O 254, O 255, P 272, P 281, P 292. patula, O 254, P 272. perforans, 52, 140, O 200, O 228, O 233, U 205, V 225. Peruviana, O 24,3 O 254, O 366, P 272. plana, O 255, O 276, P 284. porcellana, O 364, P 275. princeps, 20, 25, 76, 166. prorupta, 166, O 369. protea, O 255, P 272, P 281, P 292.

rostriformis, 32, 37, 51, 140, 197,

Crepidula

0 209, 0 230, 0 254, 0 276, O 323, P 275. rostrata, 32, 37, 52, 140, 197, O 254, O 276, O 323, P 275. rudis, P 263, P 289. rugosa, 23, 27, 51, 79, 140, O 200, O 323, O 349, P 278, P 279, **V** 224. Sitchana, 20, O 216, O 223, O 323. solida, 31, 37, 51, 140, 197, 0 206, 0 216, 0 224, 0 254, O 276, O 323, P 275. sordida, O 324. squama, 32, 51, 140, 196, O 184, 0 235, 0 255, 0 276, 0 286, P 269, P 280, P 281, V 225. squamosa, 35. strigata, O 254, P 272. striolata, 37, O 2, O 239, O 255, O 276, P 280, P 281, P 282, P 545. umbrella, P 263, P 289. uncata, 32, 37, 52, 140, 197, O 254, O 276, P 275, P 538. unguiculus, P 281. - var. 0 255, P 281. unguiformis, 27, 37, 140, 196, 197, 0 2, 0 184, 0 222, 0 255, O 276, O 282, O 323, O 363, O 365, P 272, P 282, P 284, P 285, P 286, V 225. unguiformis, var. 0 275.

#### Crepipatella

aculeata, P 268.
Adolphei, P 272.
dilatata, P 272.
dorsata, O 3.
echinus, P 268.
explanata, O 2.
foliacea, P 272.
hepatica, P 278
hystrix, P 268.
pallida, P 272.
strigata, P 272.

### Creseis

caligula, O 173. cornucopiæ, O 173. rugulosa, X 425.

#### Crucibulum

auriculatum, T 168. auritum, 52. Byronense, 52.

cinereum, 52. corrugatum, 24, 52, U 204. dentatum, O 235, T 167. extinctorum, O 364, P 287.

ferrugineum, 52. gemmaceum, 52.

hispidum, 52.

imbricatum, 27, 52, 108, 151, 152, 153, 195, O 3, O 179, 0 190, 0 204, 0 230, 0 235, O 255, O 275, O 323, P 287, P 292, P 293, T 167, T 168. imbricatum, var. O 275.

imbricatum, var. Broderipii, O 190, O 288, P 287, T 168, U 205.

imbricatum, var. Carribbense, T 167.

imbricatum, var. Cumingii, O 190, O 288, O 363, P 292, T 167.

Jewettii, 21, O 228, O 230, O 323. lignarium, 52, O 224, O 323. maculatum, 52.

- var. 195.

ctinatum, 24, 27, 52, P 292, T 168.

peziza, 52. quiriquinum, 52.

radiatum, 24, O 323.

rade, 195, O 235, O 276, O 282, T 168.

rugosum, 52, O 255.

scutellatum, 52, O 255, P 287. serratum, 52, O 323, P 292.

sordidum, 52.

spinosum, 23, 24, 27, 52, 61, 76, 79, 108, 140, 151, 152, 195,

Crucibulum

0 3, 0 179, 0 190, 0 200, 0 204, 0 230, 0 233, 0 235, 0 255, 0 280, 0 283, 0 323,

O 353, P 290, P 292, P 293. spinosum, var. 10.

spinosum, var. compresso-conicum, O 288, T 167.

striatum, 52. tenue, O 235.

tubiferum, 52.

umbrella, 24, 27, 43, 52, 195, O 323, O 364, P 295, T 168.

unguis, 52.

violascens, T 166, U 205.

# Crypta

Goreensis, P 285. nivea, O 2, P 281. Peruviana, P 272. rostrata, P 275. rugosa, P 278.

Cryptobranchia

candida, O 219. cæca, O 219.

# Cryptochiton

Stelleri, 23, 70, 134, O 297, 0 318.

## Cryptodon

flexuosus, 97, 129, 168. myoides, 11. Nuttallii, 11, 61, 72, O 194, O 300, O 349, V 210. serricatus, 88, 129.

# Cryptomya

Californica, 22, 26, 71, 78, 79, 87, 88, 119, 123, 0 194, 0 211, **V** 210.

ovalis, 79.

#### Cultellus

lucidus, O 349. subteres, 0 195.

#### Cuma

calcar, P 482. costatum, 7, 35, 155, 180, O 262, O 340, P 482, P 484, P 485. diadema, P 482.



```
44
                           INDEX OF SPECIES.
 Cuma
                                      Cyclas
     kiosquiforme, 24, 180, O 262,
                                           striatina, 164.
       O 340, P 481.
     kiosquiforme, var. O 190.
     sulcatum, O 269.
                                          tumida, 91.
     tectum, 24, 48, 180, O 182, O 191,
                                      Cyclina
       O 340, P 355, P 475, P 481.
Cumingia
                                          saccata, O 305.
     Adamsii, 38, 203.
     Californica, 26, 126, O 195, O 231,
       0 234, 0 245, 0 304, 0 351,
       O 353, P 30, V 213.
                                      Cyclophorus
     var. coarctata, 38, 47, 203, O
                                          ponderosus, 45.
       245, 0 279.
     lamellosa, 38, 47, 203, O 183,
                                      Cyclostoma
       O 245, O 304, P 29, P 30.
                                          acutum, 0 220.
    similis, 40.
    striata, O 245.
     trigonularis, 38, 47, 105, 203,
       O 245, O 279, O 304, P 30.
                                      Cyclostrema
          - var. O 184.
Cyathodonta
    plicata, 27.
    undulata, 119.
                                      Cyclotus
Cycladella
    papyracea, 29, 257.
                                     Cylichna
                                          Carpenteri, 34.
Cycladina
    Adansonii, P 108.
Cyclas
    acuminata, 164.
                                          inculta, 133.
    australis, P 108.
    calyculata, O 222, P 106.
                                            O 313, P 170.
    cornea, 164, O 210, O 222, P 106.
    edentula, 164.
                                         triticea, 71.
    egregia, O 213, O 308.
    Estrellana, 81.
                                     Cylinder
    inornata, 164.
    minor, 165.
                                     Cylindrella
    modesta, 164.
    nobilis, 165.
    ovalis, 165.
                                         Pfeifferi, O 295.
   panduta, 81.
                                         salpinx, 44.
   patella, 165, O 210, O 308.
                                         teres, 0 295.
   permacra, 81.
                                     Cymbium
   simplex, 164.
                                         patulum, 48.
   Spokani, 91.
                                         tuberosum, 48.
```

tenuistriata, 164. triangularis, 164. producta, O 284, O 305, S 161. subquadrata, 77, 201, 0 227, 0 246, 0 278, 0 305, 0 364, P 62, S 161, U 201. translucidus, 45. anatinum, 0 220. giganteum, O 185. Mexicanum, O 265. excavatum, T 169. octoliratum, T 169. pentegoniostoma, T 160. giganteus, O 326. (!cylindracea, var.) attonsa, 23, 89, 133, 169. luticola, 34, 194, O 250, O 275, mamillata, 133, O 366. planata, 133, 307. porphyreticus, 48. Ghiesbreghti, 44. Liebmanni, O 295.

#### Cypræa

adusta, 9, 0 291. acicularis, P 373. albuginosa, 8, 45, O 291. approximans, O 285. Arabica, O 239, O 265, P 545. arabicula, 35, 176, O 164, O 170, 0 178, 0 235, 0 236, 0 239, O 282, P 373, P 537, P 545. arabicula, var., O 267. armadina, O 188, O 292. Californiana, 8. Californica, O 230, O 291. candidula, O 285, O 294. cervina, O 258, P 371. cervinetta, 176, O 258, O 267, O 282, O 328, O 363, P 371, P 372. cervus, O 258, P 372. - var. P 371. costata, 8. eglantina, 11, O 265. exanthema, 27, 153, 154, 166, 176, 0 258, 0 328, 0 362, 0 363, P 371, P 372. 🗕 var. O 267. flaveola, P 373. fusca, O 187, O 239, P 378, P 545. irina, O 187. Lamarckii, O 170, O 293. lathyrus, O 258, O 293. Maugerim, O 182, O 291. nigropunctata, O 187, O 190. nymphæ, 0 291. obera, O 235. olorina, O 285. oniscus, 8, O 267, P 376. onyx, 9, 49, 0 291. Pacifica, O 182, O 230. pediculus, 8, 0 230. poraria, 8. pulla, O 186, O 286, O 291, P 379. punctulata, 35, 176, O 230, O 267, O 291, P 374.

#### Cypræa

pustulata, 6, 8, 48, 176, 0 174, 0 230, 0 236, 0 239, 0 267, P 375, P 537, P 545. radians, 8, 177, O 170, O 174, 0 230, 0 233, 0 267. rubescens, 35, 177, O 182, O 267, O 291, P 378. sanguines, 177, O 230, O 236, 0 239, 0 258, 0 267, 0 288, O 293, P 537, P 545. Solandri, O 230, O 236, O 291, P 377, P 537. Sowerbyi, O 235, O 236, O 293, P 537. spadicea, 7, 8, 49, O 230, O 235. spurca, P 373. stercoraria, P 373. subrostrata, 8, 0 239, 0 292, O 294, P 379, P 545. suffusa, O 188, O 230, O 292. tigris, 109. zebra, P 371. zonata, O 235, O 236, O 293. Cypræcassis

tenuis, 153, testiculus, 152.

acuta, 164. sequilateralis, 164. altilis, 164, O 1, O 227, O 232, O 248, P 115, U 202. angulata, 164. Californica, 164. cordiformis, 164. Cumingii, 164, O 287. Floridana, O 1, O 281, P 115, P 116. Fontainei, 164, O 248, O 281, P 114. fragilis, 164, P 115. inflata, 164, O 287, O 296, O insignis, 164, O 287, O 308. maritima, 38, 164, 201, O 278, 0 309, 8 161.



Cyrena

Mexicana, 27, 164, O 1, O 175,

O 248, O 281, O 308, P 115.

---- altilis, U 202. olivacea, 27, 164, O 248, O 281,

Mexicana, var. O 227, O 232.

solida, 60, 164, O 281, O 309.

subquadrata, 164, O 287, O 309.

æquilatera, O 203, O 246, P 549. affinis, 201, O 185, O 191, O 229,

alternata, O 247, O 289, P 69.

argentina, O 185, O 236, P 539.

aurantia, O 174, O 229, O 278.

aurantiaca, 47, 201, O 246, O

biradiata, 9, 0 211, 0 236, 0

O 247, O 278, P 69.

O 308, P 114, P 116.

Panamensis, 164.

placens, P 114.

pullastra, 164.

radiata, 164.

Recluzii, 164.

sordida, 164.

triangula, 164.

serricata, P 104.

distortus, O 231.

patulus, P 501.

arguta, 60.

278, P 63.

246, O 366, P 64.

brevispinosa, O 289, P 69.

chione, O 211, O 289, P 64.

chionma, O 236, P 64, P 539.

circinata, O 289, P 69.

concinna, O 185, P 69.

callosa, 12, 279, O 197, V 216.

brevispina, O 281.

casta, P 70.

castanea, P 70.

trancata, 121.

tumida, 164. varians, 164, P 115.

Cyrenoida

Cyrtopleura

Cyrtulus

Cytherea

Cytherea consanguiuea, 58, 201, O 278. corbicula, O 246, P 54, P 55, P 539. crassatelloides, 58, O 196, O 207, P 58, V 216. Dariena, 80. decisa, 77. Dione, var. 61, O 185, O 246, O 285, P 67. Dunkeri, 60. elegans, O 246, P 64. erycinoides, V 216. formosa, P 70. fusca, P 70. gigantea, 39, 60, 0 246, 0 289, P 60. gracilior, 58, O 246, P 55. graphica, P 70. Guineensis, P 69. Hindsii, O 246, P 55. impudica, P 70. intermedia, O 246, O 289, P 55. læta, 58. lepida, O 246. ligula, 58. Inpinaria, 6, O 185, O 229, O 284, P 67. lusoria, P 70. lutea, 58. mactroides, 60, O 246, P 55, P meretrix, 58, P 70. morphina, P 70. nitidula, 58. nobilis, 12, 106, 280. ovum, P 70. Pacifica, 60, O 246, P 55. petechialis, 69, 0 202, 0 247, O 305, O 366, P 70, lanulata, 47, O 176, O 189, P 59. punctata, P 97. radiata, 58, 201, O 191, O 278. rosea, O 175. semifulva, O 236, O 246, P 55, P 539.

#### Cytherea

semilamellosa, 6, 61, O 246, P 67, P 68. solidissima, O 196, O 296. squalida, 201, O 246, O 278, O 366, P 64. subsulcata, O 247, P 79. tigerina, P 96. tortuosa, O 185, O 229, O 247. undulata, O 189, O 246, P 59. unicolor, O 185. vulnerata, O 185, P 68.

# Cythna

albida, 99, 143. asteriaphila, 104, 218. tumens, 143, 218.

#### Dactylidea

mutica, P 470.

zonaria, P 70.

#### Dactylina

Campechensis, 121. Chiloensis, 121. dactylus, 39. laqueata, 23.

#### Dactylus

incrassatus, P 464.

### Dædalochila

implicata, O 294.

# Daphnella

aspera, 144, 314. offusa, 114, 144, 243. casta, 24, 109, O 205, O 332. crebriplicata, 109. filosa, 23, 144, 284.

### Darina

declivis, 93, 123, 251.

### Defrancia

bella, O 230, O 349. intercalaris, S 163. intricata, 97, 122, P 6, O 244, 0 298. rana, P 399. rava, O 259, O 331, S 163, S 164. serrata, B 163.

#### Dendronotus

arborescens, O 218, O 313. iris, 95.

#### Dendropoma

lituella, 42.

#### Dentalium

megamastum, 42. corrugatum, O 251, O 317, P 189. dentalis, O 222. eburneum, 134. elephantinum, P 314, X 419. entalis, 46, 98, 134, O 296. glabrum, X 414, X 435, X 436. – var. 🗶 414. hexagonum, 46, 98, 134, 154. hyalinum, 31, 134, O 225, O 251, O 317, P 188, P 536. imperforatum, X 414, X 425, X 436. incurvum, X 425. var. Indianorum, 98, 134, 169. lacteum, 31, 152. liratum, 46, O 251, O 317, P 188. minutum, X 413, X 435. nebulosum, O 175. politum, O 223, O 317. pretiosum, 31, 46, 98, 134, 0 251, O 296, P 189. pseudosexagonum, 46. quadrangulare, 46. rectius, 89, 134. semipolitum, 31, 98, 134, 152, 0 175. splendidum, 46. striolatum, 46. substriatum, 0 367. tessaragonum, O 180, O 317. tetragonum, 46, 152. trachea, X 414, X 423, X 425. – var. X 414.

# Diadora

crucibuliformis, 80.

#### Diala

aouta, 99, 143. electrina, 104, 217.

Diala mamillata, 33, P 412. marmorea, 99, 143. paupercula, 259. Dione affinis, O 305. alternata, 0 363. aurantia, O 246, O 305, P 56 P 63. aurantiaca, O 282. biradiata, O 232, O 305, P VI. brevispina, 57. brevispinata, 57, O 281, P 69. brevispinosa, O 247, O 305, O 358, P 69. chione, O 366, P VI., P 63, P 65. chionsea, O 226, O 232, O 234, 0 246, 0 282, 0 305, 0 352, O 366, P VI, P 63, P 64, P 65, P 70. chionma, var. O 364. circinata, 58, O 232, O 247, O 305, O 363, P 69. concinna, O 247, O 305, P 69. consanguinea, O 305. dione, O 232, O 364. elegans, P VI. exspinata, 58. lepida, O 234. lupinaria, 57, O 232, O 246, O 265, O 297, O 305, O 358, O O 364, P 67. maculata, 57, O 364, P 65. multispinosa, 57. nobilis, 57. pannosa, 58, 211. prora, 58. *– var*. 210. puella, 21. rosea, O 232, O 234, O 246, O Ditrupa 305, P 66. semilamellosa, 57, 58. squalida, O 305, P VI., P 64. tortuosa, 0 305. unicolor, 58, 0 305.

Dione Veneris, 57, P 67. vulnerata, O 246, O 305, P 68. Diplodonta calculus, 106, O 308. circularis, O 366. obliqua, O 224, O 248, O 308, P 103, P 534. orbella, 12, 22, 26, 113, 129, 0 197, O 232, O 308, O 349, O 351, O 352, U 202, V 218. semiaspera, 30, 154, O 197, 0 224, 0 229, 0 248, 0 297, O 308, O 363, O 366, P 102. - var. O 227, U 202. semiaspera, var. discrepans, 0 248, P 103. serricata, O 248, P 104. subquadrata, 106, O 287, O 308, Q 230. trigonula, P 103. undáta, P 103. Discina Cumingii, 37, 105, 155, 194, 205, 266, O 244, O 298, O 366, P 7. Evansii, 55, 102, O 298, O 349. striata, O 366. strigata, 54. Discopora trispinosa, P 3. Discus Vancouverensis, 157. Dispotæa Byronensis, 10. dentata, O 3, P 287. spinosa, O 239, P 546. striata, Q 234. Distortio anus, 0 171. constrictus, 182. gadus, X 413. Dollum crassilabre, O 238, P 543. dentatum, 8, O 238, P 543.

latilabre, O 238.

#### Dolium

personatum, O 238. petrosum, 166, O 367. plicosum, O 238. pomum, 0 174. ringens, 8, 179, O 231, O 238, 0 269, 0 292.

#### Donax

abruptus, O 232. assimilis, 23, 202, O 186, O 236, 0 245, 0 279, 0 297, 0 304, P 44. bellus, O 226, O 287, O 304. var. cælatus, 23, 106. Californious, 22, 26, 126, 151, 0 195, 0 196, 0 227, 0 229, 0 232, 0 241, 0 246, 0 287, 0 296, 0 304, 0 349, 0 351, O 352, P 47, P 548, U 200, V 213. carinatus, 23, 38, 154, 202, 0 208, 0 232, 0 285, 0 304, P 43, P 44. carinatus, var. 202, O 245, P 43. Carpenteri, O 287, O 304. compressus, O 236, P 539. Conradi, 106, O 170, O 241, 0 246, 0 287, 0 289, 0 304, P 46, P 47, P 548, V 213. Conradi, var. O 196. contusus, O 241, O 246, O 287, O 289, P 47, P 548. oulminatus, 38, 202, O 229, O 245, P 43, P 548, U 200. culter, 0 241, 0 246, 0 285, Doris O 287, P 47, P 48. - var. P 48, P 548. elongatus, 9. flexuosus, 21, 22, 126, O 227, O 229, O 304, O 349, P 44, P 548, U 200. gracilis, 23, 202, O 186, O 229, 0 279, 0 304. lævigatus, O 227, O 232. Lamarckii, 21. Lessoni, O 246, P 59.

#### Donax

Martinicensis, O 245. navicula, 23, 27, 106, 126, 202, 0 186, 0 229, 0 246, 0 279, O 304, P 50, P 548. obesus, 126, O 195, O 196, O 227, O 296, O 304, U 200, V 213. obesulus, O 287. ovalinus, O 287, O 304. Panamensis, O 295, O 304. pretextus, O 367. pulchellus, Q 230. punctatostriatus, 7, 23, 27, 77, 126, 151, 0 170, 0 232, 0 241, 0 246, 0 285, 0 296, 0 304, P 44, P 46, P 48, U 200, V 213. punctostriatus, var. cælatus, O 246, P 46. radiatus, 7, 0 170, 0 191, 0 246, O 287, P 44. rostratus, 23, 27, 38, 154, 202, 0 229, 0 245, 0 279, 0 304, O 364, P 548, U 200. rugosus, O 364. scalpellum, 9, O 178, P 44. scortum, O 296. semistriatus, O 287, Q 230. serrula, P 548. stultorum, 10. sulcatus, O 226. transversus, 23, 154, O 174, O 245, O 304, P 44, P 548.

albopunctata, 95. Sandiegensis, 94, 95. sanguinea, 94, 95. Montereyensis, 94, 95. **Dosinia** alta, 80, 81.

alabastrina, 94.

Annæ, 154, O 246, O 305, P 61. callosa, 279, O 281, O 305, O 349, ♥ 216. concentrica, P 60.

50 Dosinia Drillia distans, P 60. Dunkeri, 23, 106, O 163, O 186, 0 229, 0 232, 0 246, 0 282, 0 287, 0 305. gigantea, O 232, O 234. longula, 80, 81. Montana, 81. ponderosa, 27, 39, 106, 151, O 246, O 305, P 60, P 61. saccata, O 232. simplex, O 232, O 287, O 305, P 61. subobliqua, 81. turgida, O 28:. Drillia alabastra, 0 364. albicostata, O 331, O 360. albolaqueata, 155. albonodosa, O 331, P 397. albovallosa, 109, 0 226, 0 230, O 258, O 331, P 296. appressa, 104, 218. arcuata, O 331. aspera, P 395. ater, 0 331. aterrima, 24, 36, 109, 183, 184, O 331, O 364, P 393, P 395. aterrima, var. Melchersi, 36, 109, O 258, P 393. atrior, O 331. atronodosa, O 258. bicolor, O 331, O 360. cancellata, 89, 144. cerithoidea, O 258, O 330, P 394. cincta, O 331. cœlata; O 331. oælebs, O 331. collaris, 183, O 331. corrugata, 183, O 331. discors, 183, O 331. duplicata, 184, O 331. eburnea, 154, 273. exarata, 24. excentrica, 184, O 331, O 360. cancellata, O 260, O 335, P 435.

gibbosa, O 364, P 392. gracillima, var. 24. grandimaculata, 184, O 331. granulosa, O 331. Hanleyi, O 259, O 331, P 398. hexagona, 24, O 331. impressa, O 331. incisa, 89, 143, 144. incrassata, 24, 154, 184, O 258, O 331, O 364, P 392. inermis, 23, 27, 70, 143, 169, 0 330. luctuosa, 109, 143, O 258, O 330, P 385, P 392, P 394, P 397, P 398. maculosa, P 391. maura, 109. militaris, O 331. modesta, O 331. moesta, 23, 143, 283. monilifera, O 258, O 331, P 395. nigerrima, 24, 184, O 331. nitida, O 331. obeliscus, 184, O 331. pallida, 184, 0 331. pardalis, O 331. penicillata, 144, 151, 314. plumbea, O 330. punctatostriata, O 284, O 331, 8 164. rudis, 24, 184, O 258, O 282, O 331, P 393, P 394. rugifera, O 331, O 360. rustica, O 331. splendidula, O 331, O 360. striosa, 184, O 331. thiarella, P 395. torosa, 143. (?torosa, var.) aurantia, 143, 313. unicolor, O 331. zonulata, 184, O 258, O 331, P 395. Dunkeria

Dunkeria Ensatella intermedia, O 260, O 335, P 435. ambigua, 39. laminata, 23, 145, 286. rudis, 205. paucilirata, O 260, O 335, P 434. Entodesma subangulata, 36, 187, O 260, cuneata, 124. O 335, P 434. diaphana, 97, 124. – var. 36. inflata, 97, 124. picta, 124. Elephantulum saxicola, 124. abnormale, O 255, O 324, X 442. saxicola, var. cylindracea, 124. heptagonum, O 256, O 324, X Eolidia 442. pinnata, O 173. imbricatum, X 442. Erato insculptum, 0 255, 0 324, X columbella, 23, 143, 147, 169, 0 228, 0 230, 0 236, 0 328, laqueatum, O 324, X 442. P 537, U 206. liratocinctum, O 256, O 324, X Jewettii, O 230. 442. leucophæa, 143, O 228, O 230, — var. subconicum, X 442. O 328, U 206. - var. subobsoletum, X Maugerise, 24, 109, 112, O 328, 442. 0 364. - var. tenuiliratum, X 442. Maugerise, var. Panamensis. liratum, X 442. 0 284, 8 162. obtusum, O 255, O 324, X 442. scabriuscula, 24, 45, 109, 177, plicatum, X 442. 0 230, 0 267, 0 328, subspirale, O 255, O 324, X 442. vitellina, 23, 143, 0 206, 0 328. Emarginula Erycina crenulata, O 175. dubia, O 186. roses, 136, P 276, P 296. Geoffroyii, P 105. Engina papyracea, O 287. alveolata, O 341. suborbicularis, P 105. carbonaria, 181, O 341, O 361. violacea, P 108. crocostoma, 25, 112, O 231, Ethalia 0 341, 0 361. amplectans, O 254, O 322, P ferruginosa, O 231. heptagonalis, O 341. carinata, O 254, O 322, P 252. jugoea, O 270, O 341. lirulata, O 253, O 322, P 251. maura, O 341, O 361. pallidula, O 253, O 322, P 252. pulchra, 181, O 341, O 361. pyricallosa, O 253, O 322, P pyrostoma, O 341, O 361.

supravallata, 98, 138.

punctata, 104, 215.

98, 138.

supravallata, fvar. invallata,

zonata, O 341, O 361. Enæta Eucosmia cyclostoma, 104, 215.

Reeviana, 25, 112, O 341, O

Cumingii, 40. harpa, 40.

361.

52 INDEX OF SPECIES. Eucosmia **Partulum** dextroversum, O 256, O 324, variegata, 214, 215. (?variegata, var.) substriata, X 443. 104, 215. - var. Antillarum, X 443. farcimen, O 256, O 324, X 443. acuta, O 183, O 335, P 438. glabriforme, O 256, O 324. compacta, 99, 145. læve, O 256, X 443. distorta, O 296, P 408, P 441. mamillatum, X 443. falcata, 273. pollicare, X 443. fuscostrigata, 105, 219. reversum, O 256, O 325, X 443. hastata, 154, O 260, O 335, P subquadratum, X 443. 438. teres, O 256, O 325, X 443. interrupta, O 183, O 335. vitreum, X 443. – var. Clarkii, X 443. iota, 37, 192, O 274, P 440. micans, 89, 99, 145, 169. **Fasciolaria** recta, 193, O 274, P 439. aurantiaca, 48, O 261, P 459. bistriata, O 228, O 231, O 338, rutila, 99, 145. solitaria, 37, 193, O 274, P 439. U 207. canaliculata, O 171. Thersites, 23, 145, 286. yod, 39. granosa, 10, 24, 183, O 181, O 271, O 338. Eulimella princeps, 27, 48, 110, 183, O 174, obsoleta, O 260, O 335, P 436. Euomphalus 0 238, 0 261, 0 292, 0 338, radiatus, O 238, O 259, P 407, P 458, P 544. P 541. rugosa, O 171. salmo, O 188, O 338. Euparypha areolata, 158. sulcata, 60. tulipa, 24, O 171. Euryta Valenciennesii, O 188. aciculata, 24, 109, O 258, O 329, O 366, P 389. Felania Cosentini, O 366. cornea, O 308. fulgurans [=fulgurata], 0 366. serricata, 30, 201, O 308, O 364. fulgurata, 24, 27, 109, 177, O tellinoides, 23, 154, 201, O 308. 258, O 329, P 388, U 206. usta, 73. Euthria Penella crystallina, 104, 217. ferrea, 70. plumbea, 70. excurvata, 32. Evalea pupoidea, 99, 142. **Ficula** zquisoulpta, 219. delicatula, 219. decussata, 7, 153, O 231, O 234, 0 236, 0 238, 0 242, 0 282, sublirulata, 33, P 410. O 337, O 364, P 454, P 537, **Fartulum** P 544. bimarginatum, X 443. flooides, 7, O 171. corrugulatum, O 256, O 324, gracilis, O 364. X 443. Occyana, 77. .

#### **Ficula**

reticulata, O 171. ventricosa, 24, 110, 0 234, 0 O 261, O 271, O 337, P 453, P 454.

# Pissurella

æqualis, 197, O 276. affinis, P 219. alba, 46, 154, 256, O 236, O 252, O 319, P 217, P 218, Q 234. alta, 46, 197, O 276, P 221. aspera, 8, 84, O 174, O 209, 0 215, 0 224, V 223. Barbadensis, O 162, O 184, O 243, O 252, O 364, P 215. cancellatus, 46, 49. catillus, P 220. chlorotrema, O 2, O 236, O 252, P 216, P 538. coarctata, P 213. cratitia, 84, O 199, O 209, O 212. crenifera, O 184. crenulata, 76, O 234, O 283, V 223. densiclathrata, 49, 84, O 174, O 199, O 291, V 223. exarata, O 199, V 223. excelsa, 46. gemmata, O 236, O 252, P 218, P 538. gibberula, O 188, O 319. Gunneri, 49. hians, O 175. humilis, O 2, O 236, O 252, P 216, P 538, inæqualis, O 1, O 184, P 220. Lincolni, 45, 84, O 178. macrotrema, 24, 154, 197, O 184, 0 276, 0 319, 0 360. microtrema, 37, 108, 197, O 184, 0 276, 0 319. Mexicana, 46, O 188, O 319. mus, 37, 197, O 1, O 252, O 276,

O 319, P 551.

mutabilis, O 296, O 320, O 360.

#### Fissurella

nigropunctata, 24, 37, 84, 154, 197, O 184, O 276, O 282, O 319, O 360, P 214, P 218, Q 234. nigrocineta, 46, 108, O 252, O 288, O 319, P 217, P 218, Q 234. Novæ-Hollandiæ, 49. obscura, 46, 0 184, 0 320, 0 360. ornata, 13, 26, 137, O 241, O 319, O 349, P 214, V 222. ostrina, O 276, O 319. Panamensis, 46, O 184, O 320. Peruviana, O 252, O 319, P var. pica, 35, 37, O 1, O 184, O 236, O 252, P 220, P 538. rugosa, 24, 27, 46, 108, 4155, 196, O 2, O 188, O 236, O 252, O 291, O 319, O 360, P 215, P 216, P 218, V 223. rugosa, var. O 239, O 276. spongiosa, O 252, P 219. tenebrosa, 46. turbinelloides, 49. viminea, O 2, O 239, O 252, P 216, P 546. violacea, 100, 0 215, 0 224, 0 319. violascens, O 348. virescens, 27, 37, 197, O 3, O 162, O 233, O 234, O 239, O 252, O 276, O 319, P 213, P 216, P 218, P 546, V 223. virescens, var. 0 364. volcano, 13, 23, 100, 114, 137, 151, 0 208, 0 233, 0 319, 0 349.

# **Fissurellidæa**

æqualis, 197, O 320.

#### Flabellina

crassicornis, O 313. opalescens, 94, 95. subrosacea, O 313.



54 **Fluminicola** fusca, 163. seminalis, 90. virens, 162. **Possarus** abjectus, O 273. angiostoma, O 273. angulatus, 216, O 257, O 326. excavatus, 188, O 273, O 326. foveatus, O 273, O 326. maculosus, O 257. megasoma, O 273, O 326. ovoideus, U 205. parcipictus, 104, 216. purus, 104, 216. reticulatus, U 205 tuberosus, 216, O 257, O 326, P 354 Fulvia modesta, 170. Fusus ambustus, 21, 25, 150, O 228, O 234, U 208. angulatus, O 177. antiquus, 19, O 217, O 223. apertus, Q 263, P 504. Baerii, 19, O 217. Bamfius, O 209. Behringii, 19, 0 217. bellus, 183, O 271. Berniciensis, O 217. cancellatus, O 171, O 210. cancellinus, 18, O 211. carinatus, O 192. clavatus, 21, 150. contrarius, O 217, O 223. corpulentus, O 367. corrugatus, O 293. decemcostatus, 4, 20, 179, O 217, 0 223. deformis, O 217. Dupetithouarsii, 7, 28, 49, 112, 0 192, 0 204, 0 208, 0 293, 0 294, 0 296, 0 361. fidiculus, 17, O 209, O 211. fornicatus, O 177, O 217.

Fusus fragosus, 21. geniculus, 166, O 367. glacialis, O 177. Holboelli, O 217. horridus, 0 293. incisus, 18. Islandicus, O 217, O 223. Kellettii, 28, 0 240. lamellosus, 34, O 177, O 217. lapillus, 9, O 176, O 293. lignarius, O 352, P 503. luridus, 19, 0 217. Magellanicus, 7, O 171. Mexicanus, O 293. multicostatus, O 177. muricatus, O 222. nodulosus, 179. Norvegicus, O 223. Novæ-Hollandiæ, 112. Oregonensis, O 210 O 240, O 293. Orpheus, 17, 92, O 209, O 213. pallidus, O 176, O 208, O 234, O 263, O 288, O 352, P 502. pygmæus, O 217. rheuma, O 238, P 544. Sabinii, O 177, O 217, O 223. salebrosus, P 485. scalariformis, O 217. Sitchensis, 18, 19, O 217. tenebrosus, O 217. Thouarsii, 112. torheuma, O 238. tumens, O 263, P 503, P 504. turbinelloides, P 503. turriculus, O 209, O 211. turris, 7, 0 171. ventricosus, O 177. Wiegmanni, O 261, P 455. Gadinia Afra, O 366.

pentegoniostoma, 195, O 1, O 185, O 252, O 319, O 366, P 212,

# Gadinia

reticulata, 152. steltata, 31, 195, O 319.

# Galeomma

macroschisma, 46. Turtoni, 46.

aspersus, O 275. asperus, O 323. conicus, 24, 27, 37, 152, 154, 195, 0 235, 0 254, 0 282, O 323, P 265, P 266, P 267. contortus, 76, 98, 140. fastigiatus, 25, 140, 322, O 323. lichen, P 266, P 267. mamillaris, 24, 27, 37, 52, 140, 154, 195, 0 190, 0 230, 0 233, 0 235, 0 254, 0 276, 0 282, O 323, O 366, P 266, P 267, Q 233.

regularis, 37, 195, O 323, P 266, Q 233.

Sinensis, O 366, P 266, P 267, Q 233.

- var. fuscus, O 288, Q 233.

sordidus, P 292.

striatus, P 292, Q 234. subreflexus, 52, O 288, O 323, Q 233.

# Garnotia

solida, 197, O 254, O 297, P 275.

### Gastrochæna

brevis, O 184, O 299, O 359. cuneiformis, P 547. hyalina, O 184, O 299, O 359. ovata, 105, 121, O 184, O 244, O 299, O 363, P 15. rugulosa, O 184, O 299, O 359. truncata, O 184, O 244, O 299, 0 363, P 14, P 15.

# Gena

varia, 40.

#### Gibbula

coronulata, O 321. funiculata, 114, 139, 239.

# Gibbula

lacunata, 113, 139, 239. minor, P 461. nivosa, 73. optabilis, 98, 139. parcipicta, 113, 139, 238. redimita, 73. succincta, 113, 139, 238. Gitocentrum

# Glandina

Chiloënsis, 121. Albersi, 156, O 251, O 287, O 313, P 175. – var. turrita, 156, P 175. Carminensis, 44. conularis, O 287. fusiformis, 0 285. Ghiesbreghti, 44. Isabellina, O 286. monilifera, O 286. nigricans, O 286. obtusa, O 186, O 314. Bowerbyana, O 286, O 314. tortillana, O 286, turris, 156, O 251, O 313, P

### 175. Glaucus

draco, O 173. Pacificus, O 173. Globulus tumens, O 253, O 322, P 250.

# Glycimeris

Estrallina, 82. generosa, 123, 165, 168, 169.

# Glyphis

P 221, P 222. aspera, 45, 49, 137, O 199, O 291, O 320, V 223. cratitia, 8, 137, O 320. crenifera, O 320. densiclathrata, 8, 13, 23, 27, 137, 0 320. insequalis, 24, 27, 37, 108, 153, 197, 214, 0 1, 0 252, 0 360, P 220, P 222.

alta, 24, 27, 197, O 252, O 320,

56 INDEX OF SPECIES. Glyphis Halectis Lincolni, 8, 137, O 320. Japonica, O 350. microtrema, 0 364. pica, O 320. saturnalis, 104, 214. nodosa, 10. Gnathodon Lecontii, 78, 119. pulcherrima, 4. mendicus, 21, 29, 78, O 232, O 246, O 304, P 549, U 200. trigonus, 21, 62, 78, 119, O 227, 0 320, 0 350. P 52, U 200. Gonidea feminalis, 120. Randallii, 120, 223. Gouldia tuberculatus, 43. Haminea Pacifica, 30, 38, 201, O 247, O 278, O 306, O 364, P 82, P 83, O 313, P 174. P 84, P 549. varians, 30, O 247, O 306, O 364, O 366, P 83, P 530, P 549. luticola, P 170. Gratelupia O 351, U 203, U 204. Hydeana, 77. mactropsis, 77. virescens, 31, 79, 132. Haplocochlias Gryphæa cyclophoreus, 104, 215. angulata, P 160. Harpa Gundlachia Californica, 119, 161. P 543. Haliotis aquatilis, O 216, O 286, O 320, gracilis, O 176. Mexicana, O 292. 0 350. minor, 0 179. Californiana, 7, O 170. Californiensis, 6, 7, 13, 84, 100, 137, O 174, O 199, O 291, 0 366. O 320, O 350, O 351, V 223. roses, var. O 292. corrugata, 10, 84, 137, O 291, scriba, O 171, O 340. 0 320, 0 350. testudinalis, O 292. Cracherodii, 6, 7, 9, 13, 23, 27, Harvella 84, 100, 108, 137, 151, 0 174, 0 199, 0 229, 0 241, 0 291, Hastula O 320, O 350, O 351, V 223. luctuosa, P 387. discus, 69, 350. Haustator fulgens, 60. Banksii, P 330. glabra, 6, 9, 0 199, 0 291, V goniostoma, P 330. 223. tigrina, P 332. interrupta, 7.

# Kamtschatkana, 27, 69, 72, 84, 100, 113, 137, 0 216, 0 226, 0 283, 0 295, 0 320, 0 350. rufescens, 7, 13, 23, 27, 84, 100, 114, 137, 144, 0 192, 0 229, splendens, 23, 27, 42, 60, 72, 84, 108, 137, 151, 0 199, 0 286, O 320, O 350, O 351, V cymbiformis, 31, 132, O 250, hydatis, 85, 89, 132, 169. vesicula, 79, 132, O 227, O 313, crenata, 7, 8, 46, 111, 153, 0 177, 0 238, 0 292, 0 340, 0 366, Rivoliana, 46, O 238, O 292. rosea, O 177, O 179, O 292, elegans, 21, 23, 100, 204.

Haustrum dentex, 6. pictum, 6. tuberculatum, 6. Hecuba culminata, P 548. Helicina amona, chryseis, 45. Lindeni, 45. merdigera, 45. Oweniana, 45. Salvini, 45. turbinata, 45. Helisoma corpulentum, 161. trivolve, 161. Helix acutedentata, 157. anachoreta, 157. annulifera, O 286, O 314. Antoni, O 295, O 314. arborea, 96, 115, 116. arboretorum, 59, 157. arbustorum, 162. areolata, 116, 152, 158, O 208, O 265, O 294, O 295, O 314. arrosa, 59, 96, 151, 157. aspera, 162, 0 239.

Ayresiana, 118, 158. Baskervillei, 85, 157, O 226, O 286, O 290, O 297, O 314. bicincta, O 294. Bridgesii, 118, 158. Breweri, 95, 96. Buffoniana, O 265, O 294, O 295. caduca, 0 295. Californica, O 226. Californiensis, 59, 96, 120, 157, 158, 0 198, 0 212, 0 234, O 294, O 314, V 220. Carpenteri, 118, 158. Carpenteriana, 118.

carthusiana, O 222. chersina, 95, 96.

cicercula, O 265.

Helix coactiliata, 44. Columbiana, 85, 92, 96, 115, 157, O 198, O 239, O 294, O 314, V 220. concava, 115, O 21L Cooperi, 115, 157. crebristriata, 95. cultellata, 59. Damascenus, 59, 120, 158. devia, 85, 157, O 209, O 213, 0 226. Dupetithouarsii, 59, 87, 92, 96, 118, 119, 158, O 203, O 294, 0 314. Duranti, 96. euryomphala, 44, O 295. exarata, 59, 96, 158. eximia, 44. facta, 95. fidelia, 59, 84, 92, 96, 120, 157, 158, O 198, O 212, O 234, O 294, O 314, V 220. fraterna, 0 211. fulva, O 222. Gabbii, 95. Gaulteriana, P 247. germana, 157, O 210, O 211, 0 314. Ghiesbreghti, 44, O 295. griseola, O 265, O 294, O 295. Hildebrandi, 119. Hindsi, O 286, O 294, hispida, O 222. Humboldtiana, O 294. imperator, 0 265. infirmata, O 283. infumata, 79, 87, 96, 157, O 314. inflecta, O 211. intercisa, 95, 120, 158. Kellettii, 95, 96, 158, O 233,

0 239, 0 314, 0 351.

0 212, 0 213, 0 314.

labiosa, 85, 115, 157, O 209,

labiata, 92.

Helix



labyrinthus, O 239, O 265, O - var. sipunculata, O 286. Lalliana, 44. laxata, 44. Leconti, 157. levis, 158, O 208, O 294, O 295, 0 314. loisa, 157. loricata, 96, 157, O 209, O 211. lucubrata, O 265, O 294. Mazatlanica, 59, 157. Mexicana, O 294. mormonum, 59, 96, 158. Mullani, 115, 157. nemorivaga, 157. Newberryana, 96. Nickliniana, 59, 96, 120, 157, 158, 0 198, 0 212, 0 226, O 314, V 220. Nuttalliana, 59, 84, 87, 157, O 210, O 226, O 239, V 220. Nystiana, O 186, O 295, O 314. Oajacensis, O 294. oruginosa, 13, 59, 87, 157, O 226, 0 283, 0 314. Oregonensis, 59, 79, 87, 120, 158, O 198, O 314, V 220. Pandorse, 59, 116, 158, O 239, 0 314. pedestris, 59, 157. peregrina, 61, 162. plicata, O 265, O 295, O 314. polygyrata, 115. polygyrella, 115, 157. princeps, P 177.

pulchella, O 222.

Pytonesica, 95.

quadridentata, O 295, O 314.

quinquestrigata, O 295.

reticulata, 59, 118, 158.

ramentosa, 120, 158. redimita, 157.

pura, O 222.

Rothi, 95.

Helix rotundata, 36, 92, 191. ruderata, O 222. ruida, 59, 157. rufescens, 92. rufocineta, 95. Sagraiana, 59, 162, O 294, O 314. Sandiegonensis, 162. Schrenkii, O 222. var. sipunculata, O 239. solitaria, 115. spendidula, O 265. sportella, 85, 92, 96, 115, 157, 0 209, 0 226, 0 314. spirulata, O 186, O 265, O 295, 0 314. stagnalis, P 361. striatella, 95, 116. strigosa, 115, 157, O 209, O 212, 0 213, 0 314. Thouarsii, 92, 96, 118, 119. — var. 96. tenuicostata, O 294. Townsendiana, 13, 59, 84, 92, 115, 0 198, 0 210, 0 213, 0 226, 0 239, 0 294, 0 314, ¥ 220. Traskii, 96, 118, 158. Tryoni, 95. tudiculata, 72, 85, 96, 157, O 211, 0 233, 0 294, 0 314, 0 351. uncigera, O 187, O 290, O 295, 0 314. undata, P 176. Vancouverensis, 79, 85, 92, 96, 115, 157, O 198, O 210, O 211, 0 212, 0 213, 0 294; 0 314, V 220. vecillata, O 314: [misprint for] vellicata, 92, 115, 157, O 239. ventrosula, O 286, O 294. vincta, 158, 0 203, 0 226, 0 297,

0 314.

vittata, 6, 59, P 177.

```
Hemicardium
                                     Hipporyx
    biangulatum, 23, 38, 75, 97, 106,
                                         Grayanus, 24, 27, 37, 108, 194,
      128, 201.
                                           0 184, 0 193, 0 200, 0 230,
    graniferum, 23.
                                           0 255, 0 275, 0 282, 0 353,
                                           O 360, O 361, O 366, P 299,
    medium, 38, 201.
                                           R 4, R 5.
    obovale, 155.
Hemifusus
                                         mitralis, P 297.
    Belcheri, 60.
                                         mitrula, O 226, O 324, O 363,
                                           P 297, R 3.
Heterodonax
    bimaculatus, 12, 27, 38, 105,
                                         Panamensis, O 255, O 275, O
      112, 126, 151.
                                           324, O 363, P 297, R 3.
          - vars. 23.
                                         planatus, 140, O 255, O 284,
    Pacificus, 78.
                                           O 324, P 298.
Hiatella
                                         radiatus, 194, O 184, O 200,
    oblonga, O 221.
                                           O 230, O 255, O 275, P 299, R 4.
Hiatula
                                         serratus, 27, 98, 140, 195, 256,
    compacta, 151.
                                           0 226, 0 236, 0 239, 0 255,
    Nuttallii, 74.
                                           O 324, O 364, P 296, P 297,
                                           P 300, P 549, R 3, R 5.
Hima
    decussata, P 497.
                                         subrufus, 37, 194, 282, O 230,
Hinnites
                                           O 275, O 363, R 4.
    Californiensis, 13.
                                         tessellatus, P 90, P 549.
    crassus, 81.
                                         tuberculatus, R 4.
    giganteus, 8, 13, 14, 20, 22, 25,
                                         tumens, 23, 27, 140, 282.
      26, 81, 131, 151, 169, 0 164,
                                     Homalopoma
                                         sanguineum, 23, 74, 113.
      O 193, O 233, O 290, O 312,
      O 350, O 351.
                                     Hyala
    Nicklinianus, 13.
                                         rotundata, 104, 217.
    Nuttalli, O 193.
                                     Hyalæa
    Poulsoni, 8, 13, 131, 0 193,
                                         tridentata, 132.
      0 233, 0 290.
                                     Hydrobia
Hipponyx
                                         compacta, 104, 217.
    antiquatus, 27, 108, 140, 194,
                                         stagnalis, P 361.
                                         ulvæ, 20, 142, O 257, O 327,
      0 255, 0 324, 0 363, 0 365,
                                            O 366, P 361.
      P 296, P 297, P 298, R 3.
    australis, O 236, O 255, P 299,
                                     Ianacus
       P 538, R 3.
                                         Lessonii, O 2, P 280.
     barbatus, 24, 37, 108, 140, 194,
                                         squama, O 2, P 280.
       195, 0 255, 0 275, 0 324,
                                         unguiculus, P 281.
       O 366, P 299, R 3, R 4.
                                         unguiformis, P 284.
     barbatus, var. costellatus, R 4.
                                     Ianthina
     cranioides, 114, 239.
                                         bifida, P 185.
     crispus, P 299, R 4.
                                         communis, 74, O 366, P 186.
     effodiens, R 5.
                                         decollata, 52, 107, O 251, O 316,
     foliaceus, O 239, O 255, P 296,
                                            O 364, P 187.
       P 546, R 3.
```

### 60 INDEX OF SPECIES. Isonnochiton Ianthina fragilis, 52, 186, O 364, P 185. limaciformis, 63, 108. Magdalensis, 18, 107, 135, 151, globosa, 52, O 251, P 187. 266. pallida, O 366. prolongata, 74, O 251, O 364, Mertensii, 89. O 366, P 185, P 187. Nuttallii, 113. parallelus, 104, 212, 213. striolata, 52. striulata, 31, 52, O 251, O 316, pectinatus, 98. O 364, O 366, P 185. (?var.) prasinatus, 104, 213. - var. contorta, O 251, P pseudodentiens, 16, 92, 98. 186. retiporosus, 89. sanguineus, 266. Iberus Gaulterianus, P 247. scabricostatus, 98. sportella, 157. serratus, 104, 213. Imperator trifidus, 89. veredentiens, 98, 135. olivaceus, P 227. serratus, 98, 138. Isognomon Chemnitzianus, 24, 27, 107, 199, unguis, 29. 0 249, 0 297, 0 311, 0 352, Infundibulum Californicum, 40, O 286, P O 363, O 365, P 150. *- var*. 199. Chemnitzii, P 151: [=-anus.] chloromphalus, 40. Gabiotense, 82. costellatus, 107, O 349, ▼ 219. flexuosus, O 311, O 363. radians, P 264. Iopas incisus, 107. sertum, P 489. Janus, 107, O 250, O 311, P Iphigenia 151. altior, 23, 27, 202, O 245, O 304, perna, P 150. lævigata, O 245, O 304, O 366, Janira P 42, P 548. bella, 80. Iphinoe dentata, 14, 27, 81, 98, 107, 131, coronata, 72. 153. Isapis Estrellana, 81. fenestrata, 99, 114, 142, 241. excavata, 131, 153. maculosa, O 257, O 327, P 247, Jeffrevsia P 355. Alderi, 109, 143, O 257, O 327, obtusa, 99, 142. P 362. ovoidea, 142, 241, O 230, O 326, bifasciata, 109, O 257, O 327, P 355, P 356, U 205. O 366, P 362, P 363. Ischnochiton opalina, O 366. Beanii, 108. translucens, 99, 143. Elenensis, 38, 39, 104, 266. tumens, O 257, O 327, P 366. var. expressus, 38, 266. Jouannettia flectens, 89, 92. Darwinii, 251. Gothicus, 98. pectinata, 121.

## Katharina

Douglasiæ, 9, 134, O 192, O 288, 0 318, 0 348. submarmorea, O 318. tunicata, 26, 134, O 318.

## Kellia

(var.) Chironii, 99, 113, 129. Laperousii, 15, 26, 88, 129, 304, 305, O 308, O 349. pulchra, O 295. rotundata, 129, 305. rubra, P 108. suborbicularis, 39, 88, 97, 106, 129, 155, 168, 303, 305, O 208, 0 248, 0 297, 0 308, 0 365, 0 366, P 105. ventricosa, O 280.

## Kennerlia

bicariuata, 8e, 97, 124, 232. filosa, 88, 124, 231. glacialis, 231, 232.

## Lacuna

var. aurantia, 142. carinata, 17, 118, 142, 240, O 209, 0 211, 0 213, 0 327, 0 348. decorata, 114, 142, 240. var. effusa, 114, 142, 240. var. exæquata, 114, 142, 240. glacialis, O 220, O 223. pallidula, P 252. porrecta, 114, 142, 240. puteolus, O 240. solidula, 17, 25, 142, 240, 322. (!solidula, var.) compacta, 114, unifasciata, 23, 142, O 228, O 230, 0 327. variegata, 114, 142, 240. vincta, 89, 142, 169. Lævicardium. See Liocardium.

Lagena

Californica, O 286.

## Lagena

Wiegmanni, P 455. Laminaria digitata, Q 236, Q 237. Lanistes discors, 70.

## Lasæa

oblonga, O 248, O 308, P 109. rubra, 30, 88, 97, 106, 129, 169, O 248, O 308, O 366, P 108. trigonalis, O 248, O 308, P 109.

## Lasea. See Lassea.

lævigata, 70.

## Lathirus

armatus, O 287, O 297, O 338. Californicus, O 338. castaneus, 24, 48, 154, 183, 0 282, 0 338. ceratus, 24, 110, 183, O 261, O 338, O 361, P 457. concentrious, O 282, O 338. gracilis, 8 166. Knorrii, O 364. nodatus, O 338. rudis, 24, 183, O 338. spadiceus, 183, O 338. tuberculatus, 24, 61, O 282, O 338, O 361, O 364, P 457. tumens, O 284, O 338, S 166. varicosus, O 338, O 361. Lathyrus. See Lathirus. Latirus. See Lathirus. Latyrus. See Lathirus. Lavignon lamellosa, P 29. Lazaria affinis, 14, 23. Californica, 27, 30, 106. pectunculus, 153.

subquadrata, 22, 113, 128, 280. Leda

arctica, 70. cælata, 22, 130. costellata, O 311. commutata, 130. ouneata, 98, 130.



```
62
                          INDEX OF SPECIES.
Leda
                                     Lepidopleurus
    eburnea, 46.
    Klenensis, 24, 200, O 249, O 311,
       P 145, P 530.
                                     Lepralia
    fossa, 88, 91, 130.
    foveata, 91.
    gibbosa, O 311.
    hamata, 98, 130.
                                         cucullata, P 3.
    Hindsii, 41.
    impressa, O 367.
    inornata, 130.
    lyrata, 46.
    minuta, 71, 89, 130, 169.
    minuta, var. 71.
    pernula, 130.
                                     Leptinaria
    polita, 24, 200, 311.
                                         Elisse, 44.
                                         Emmelinæ, 44.
    Sowerbiana, 46.
    Taylori, 41, 46.
                                     Leptochiton
Leiosolenus
                                         cinereus, 92.
    spatiosus, O 249, O 310, P 130,
      P 550.
                                         lividus, O 317.
Leiostraca. See Liostraca.
Leiostracus
                                         nexus, 98, 136.
    Mexicanus, P 177.
    Ziegleri, P 177.
Lepas
                                     Leptoconchus
    alba, P 297.
                                         monodonta, 63.
Lepeta
                                     Leptoconus
    candida, 71.
    cæcoides, 89, 137, 169.
Lepidopleurus
    Adamsii, 37, 265, 266.
    Beanii, O 252, O 317, P 197.
    bullatus, O 252, O 317, P 195.
                                    Lepton
          - var. calciferus, O 252,
      P 196.
                                           110, P 111.
    olathratus, O 252, O 317, P 195.
    limaciformis, O 317.
    MacAndrese, O 252, O 317, P
      196, P 197.
    Magdalensis, O 317.
    Mertensii, 89, 135.
                                    Leptonyx
                                         bacula, 98, 138.
    pectinatus, 89, 135.
                                         sanguineus, 113, 138.
    regularis, 135.
    sanguineus, O 252, O 317, P 194, Leptoxis
      P 195, P 196.
                                         fusca, 163.
```

# scabricostatus, 98, 135. tenuisculptus, 37, 39, 266. adpressa, 256, O 244, O 298, P atrofusos, O 243, O 298, P 3. hippocrepis, O 244, O 298, P 4. humilis, O 244, O 298, P 5. marginipora, O 244, O 298, P 4. Mazatlanica, O 243, O 298, P 3. rostrata, O 243, O 298, P 4. trispinosa, O 243, O 298, P 3. interstinctus, 16. Mertensii, O 317, O 349. proprius, O 317. scrobiculatus, O 317, O 349. gladiator, P 405. puncticulatus, P 404. purpurascens, P 402. regularis, P 402. regalitalis, P 403. clementinum, O 248, O 308, P dionæum, O 248, O 308, P III. meroëum, 97, 129. placunoideum, P 111. umbonatum, O 248, O 308, P

Limnophysa

Limnea

palustris, 160.

proxima, 160.

Sumassii, 159.

Traskei, 160.

Adelinæ, 160.

appressa, 159.

cataracta, 93.

cornea, 160.

auricularia, O 222.

catascopium, 160.

bulimoides, 116, 160.

apicina, 160, O 210, O 316.

reflexa, 159.

solida, 160.

## Leptoxis Nuttallii, 162. virens, 162. Lescea. See Lassea. Leuchochila chordata, 158. Leucozonia Californica, O 297. cingulata, 24, 28, 151, 180, O 171, O 231, O 235, O 261, O 338, P 457. Levenia coarctata, 24, 27, 110. Levicardium. See Liocardium. Lima angulata, 24, 154, 199, O 185, 0 189, 0 229, 0 277, 0 284, 0 311. arcuata, 107, 199, O 189, O 277, 0 311, 0 359. dehiscens, 98, 131. fragilis, 107. gigantea, 8. hians, 131. orientalis, 98, 131. Pacifica, 199, O 277 O 311, O 359. squamosa, 21, 47, 69, 107, O 222. var. tenera, 131. tetrica, 21, 27, 69, 107, 0 227, O 234, O 311, O 352, V 203. Limacina artica, O 218, O 221, O 223. belicialis, O 221. Limatula subauriculata, 98, 131. Limax Columbianus, 85, 159, O 210, 0 213, 0 313.

## desidiosa, 93, 116. elodes, 90, 160. elongata, 159. emarginata, 85, 160. exigua, 120. exilis, 159. expansa, 160. ferruginea, 160, O 265, O 316. fragilis, 116, 159, 160. Gebleri, O 222. Haydeni, 159. humilis, 116. jugularia, 85, 159. lepida, 159, O 209, O 213. leucostoma, O 222. megasoma, 93. Nuttalliana, 160, O 198, O 316, V 220. Ontariensis, 160. pallida, 120, 160. palustris, 90, 116, 160, 169, 0 222. foliolatus, O 213. pinguis, 160. Limnophysa plebeia, 160. Adelina, 160, proxima, 120, 160. bulimoides, 160. reflexa, 159. catascopium, 160. sericata, 160. emarginata, 160. serrata, 160. ferruginea, 160. solida, 160. pallida, 160. speciosa, 159.

## 64 INDEX OF SPECIES. Lithodomus Limnea stagnalis, 93, 159, O 222. Sumassii, 90, 159. attenuatus, 38, 47. Traskei, 160. calyculatus, 50. truncatula, O 222. - var. P 124. umbrosa, 85, 159, O 210, O 316. ventricosa, O 213. Virginiana, 160. cinnamominus, 50. Limnæa. See Limnea. coarctata, 50. Cumingianus, 50. Limnæus. See Limnea. Limæa subaurioulata, 169. Gruneri, 50. Lingula lithophagus, P 127. albida, 122, O 207, O 298. pessulatus, 50. Liocardium plumula, 38, 50. apicinum, 23, 104, 211, 261. -var. 50. cruentatum, 128. subula, 50. elatum, 27, 97, 128, 152, O 248. teres, 50. Elenense, 170. Lithophagus Mortoni, 168. substriatum, 21, 128, 168, 170. Lioconcha P 126, P 128. hieroglypica, 101. Liostraca distorta, O 335, O 363, O 366, P 129, O 249. P 441. - var. yod, O 260, P 441. fulvocincta, P 440. P 124, P 127. involuta, 193. iota, 33, 37, O 335, P 441. I 24. — var. retexta, O 260, P 440. linearis, 193, O 260, P 440. P 127, P 129. producta, 33, 193, 260. recta, 33, 193, 260, O 260, O 335, dactylus, O 174. P 439. retexta, 33, 37, 39, 192. U 202. solitaria, 33, 193, 260, O 260, O 350, U 202. O 335, P 439. Liotia lævigatus, P 125. acuticostata, 98, 138. carinata, O 253, O 322, P 248. C-B-Adamsii, O 253, O 322, P rugiferus, P 125. Litiopa 249. divisa, O 288, O 350, Q 234. fenestrata, 98, 138. striulata, O 253, O 322, P 248. saxicola, 190, O 273, P 369, Q 234.

# aristatus, 38, 47, 50, P 126. caudigerus, 47, 50, P 127. cinnamomeus, 50, P 129. falcatus, 50, O 227, U 202. aristatus, 23, 107, 199, O 249, O 297, O 310, O 363, O 365, aristatus, var. gracilior, P 129. aristatus, var. tumidior, P 125, attenuatus, 26, 130, 152, 199, O 233, O 248, O 309, O 351, calyculatus, O 249, O 309, P caudigerus, O 363, O 365. cinnamomeus, 72, 200, O 174, 0 234, 0 249, 0 309, 0 363, falcatus, O 229, O 232, O 234, Gruneri, O 227, O 229, O 232, plumula, 107, 130, 199, 256, O 249, O 310, P 125, P 128.

## Litorina

aberrans, 60, O 186, O 326. angiostoma, 188, O 273. angulifera, U 205. aspera, 24, 152, 188, O 162, 0 186, 0 216, 0 224, 0 230, 0 235, 0 237, 0 257, 0 273, O 286, O 326, O 348, P 348, P 349, P 350, P 536, P 540. aspera, var. O 273, P 349. atrata, 36, 188, 190, O 273, O 326. castanea, 20. cincta, 17. conspersa, 24, 27, 60, 108, 188, 189, 0 208, 0 237, 0 257, 0 326, P 346, P 347, P 348, P 349. - var. 0 230, 0 273. coronata, O 297, O 326. dubiosa, 32, 188. excavata, 188, O 273. fasciata, 27, 152, 188, 189, O 177, O 208, O 237, O 257, O 273, O 296, O 326, O 352, P 351, P 540. foveata, 188, O 273. grandis, 19, 0 215, 0 220, 0 223. Grænlandica, 70. iostoma, 35. irrorata, 51. Kurila, 19, O 215, O 220, O 223, lepida, 17, 142, O 209, O 326, 0 348. litorea, 19, 0 176. maculata, 35. megasoma, 188, O 273. modesta, 51, 84, O 216, O 224, · O 237, O 257, O 286, O 326, P 340, P 347. var. modesta, 141. muricata, O 222. neritoides, O 222. parvula, 32, 36, 188, O 273, O 295, O 326.

5

## Litorina

patula, 17, 84, 141, O 209, O 212, 0 213. Pedroana, 76, 118. phasianella, O 273, O 295. Philippii, 24, 32, 36, 108, 188, 0 257, 0 273, 0 326, 0 364, P 349. Philippii, var. dubiosa, O 273. -, var. penicillata, 104, 109, 216. planaxis, 17, 23, 27, 84, 141, 151, 0 200, 0 209, 0 212, 0 224, O 230, O 235, O 326, O 349, P 348, P 349, V 226. plena, 17, 71, 76, 79, 142, O 209, 0 213, 0 326. pulchra, 48, 61, 189, O 160, O 273, O 326, P 351. pullata, 32, 104, 216. punctata, P 346. puncticulata, 189, O 230, O 257, O 273, P 346, P 347. porcata, O 186, O 326, O 360. pusilla, O 230. rudis, 84, 141, O 222. scabra, P 351. scutellata, O 213, O 326, O 348. scutulata, 17, 23, 84, 142, O Sitchana, 17, 19, 20, 84, 141, 0 216, 0 223, 0 286, 0 326. squalida, O 176. sulcata, 84, 141. subtenebrosa, 19, 84, 141, O 215, 0 220, 0 223. tenebrata, 13, O 200, O 230, V varia, 48, 188, 189, O 273, O 326. sebra, P 348. ziczac, O 364, P 348. (ziczac, var.) lineata, 104, 216. Livona pica, O 225, O 228, O 321, O 350.



## 66 Livona picoides, 21, 23, 100, 138. Lophyrus Adamsii, 198, 265. albolineatus, O 252, O 317, O 352, P 191, P 193. articulatus, O 3, O 251, O 317, P 190, P 192, P 193, P 199. dispar, O 317. Goodallii, O 317, O 360. lævigatus, O 317, O 352, P 191. striato-squamosus, O 252, O 317, P 192, P 196. 198, 266, 0 Stokesii, 153, 317. sulcatus, O 317, O 360. tenuisculptus, 198. Lottia conica, 79. gigantea, 26, 47, 136, 151, 309, P 199. mitra, 79. pallida, O 177, O 199, O 215, V 222. patina, 37, 79, 197, 268, O 252, O 276, O.284, P 203. pintadina, 31, O 173, O 209, O 211, P 203, P 208, V 221. punctata, O 174, O 215, P 209, ¥ 222. scabra, 79, O 199, O 284, P 209, V 222. spectrum, 79, O 284. testudinalis, O 211. textilis, O 209. viridula, O 210. Lucapina alta, P 221. crenulata, 27, 45, 76, 137, 151, O 1, O 174, O 199, O 320, 0 349, V 223. inæqualis, P 220. pica, P 220. Lucina acutelirata, 97. acutilineata, 129, 165, O 367.

## Lucina

annulata, O 248, O 289, O 307, P 96, P 97. Artemidis, 128, O 227, O 308, U 201. bella, 102, 128, 151, O 197, O 234, O 307, O 351, V 218. borealis, 97, 129, 168, O 167, P 96. celata, O 248, P 102, P 103. calculus, O 187, P 96, P 100. Californica, 22, 25, 26, 86, 128, 151, 0 197, 0 234, 0 307, 0 351, ₹ 218. cancellaris, 106, O 224, O 248, O 307, P 99, P 534. Candeana, O 364, P 103. capax, 39. carnaria, O 245, P 40. Childreni, 8. commutata, P 99. compressa, 8. cornea, O 187, P 103. corrugata, O 203. cristata, 14, O 203, O 245, P 39. eburnea, 23, 106, O 187, O 248, 0 308, P 101. excavata, 23, 106, O 248, O 308, P 98. fenestrata, O 207, O 297, O 308. fibula, O 187, P 96, P 99. glacialis, O 327. lenticula, 165. lentilaria, 47. lingualis, 104, 211. Mazatlanica, 97, O 248, O 307, P 99, P 530. muricata, O 249, O 307, P 98. Nuttallii, 78, 128, O 197, O 307, O 351, V 218. obliqua, 60. occidentalis, P 96. orbella, 30, 78, O 227, O 229, O 284, U 202, V 218. pecten, O 197, O 364, P 99. pecten, var. V 218.

## Lucina pectinata, 23, 102, 128, 154, O 248, O 308, O 364, P 98. pisum, 60. prolongata, O 248, O 308, P punctata, 47, O 174, O 187, 0 232, 0 248, 0 307, 0 351, O 352, P 96, P 97. reticulata, P 99. scabra, 9. semireticulata, O 248, P 102. serricata, P 104. squamosa, P 99. tellinoides, 201, O 279. tenuisculpta, 88, 97, 128. tigerina, 63, 153, O 243, O 248, 0 282, 0 308, 0 350, 0 363, P 96, P 97. undata, 272. unifasciata, U 205. Lucinopsis subquadrata, P 62. undata, Q 231. Lunatia algida, 17, O 336, O 348. aperta, 71. Bonplandi, O 337. caurina, 9, 147, O 336, O 348. flava, O 336. Gallapagosa, O 337, O 360. herculma, 17, 147, O 336, O 348. heros, 168. impervia, O 336. Lewisii, 17, 23, 25, 82, 101, 147, 168, 0 336. lurida, O 337. otis, O 337, O 360. pallida, 71, 147, 169. pallidoides, 71. ravida, 60. septentrionalis, 71. soluta, 9, 147. tenuilirata, 214, O 261, O 337, P 451.

# Luponia albuginosa, 27, 32, 109. fimbriolata, 154. nigropunctata, O 328, O 360. semipolita, 154. Sowerbyi, 27, 109. spadicea, 9, 23, 143. spurca, 32, O 328. Lutraria canaliculata, O 211. capax, 11, 86, O 209, O 213, O 219. carinata, O 211.

elegans, 204, O 280.
inflata, O 296.
lineata, 61.
maxima, 11, 17, 86, O 192, O 209, O 219, O 224, O 300.
nasuta, O 232.
Nuttallii, 61, 69.
papyria, 81.
transmontana, 81.
Traskei, 76.
undulata, O 211, O 227, O 232,

O 280, U 200. ventricosa, 29, O 211, O 227, O 232, O 246, P 51, P 548, U 200.

## Lutricola

alta, 22, 80, 81, 125, 301. Dombeyi, 40, 301. ephippium, 301. viridotineta, 105.

## Lymnæa. See Limnea. Lyonsia

arenosa, 73.
bracteata, 124, O 300.
Californica, 22, 26, 124, 167,
O 194, O 226, O 300, O 349,
O 351, U 199, V 211.
cuneata, Q 229.
diaphana, 40, O 284, O 287,
O 301, Q 228.
flabellata, 73.
Floridana, 119, 124, 169.
gibbosa, O 222.

## Lyonsia

hyalina, 20, 167, 0 194.
inflata, 40, 105, 0 193.
navicula, 73, 91.
nitida, 124, 0 194, 0 297, 0 300,
U 199, V 211.
Norvegica, 20, 71, 73, 0 219,
0 222, 0 223.
picta, 105, 0 184, 0 245, 0 301,
0 358, 0 364, P 26.
plicata, 0 364.
saxicola, 91.
striata, 0 222.
ventricosa, 73.

## Lyria

Cumingii, 40. harpa, 24, 40.

## Machæra

costata, 20, 73, 87, 0 219, 0 222, O 223, 0 301. lucida, 72, 124, O 195, O 301, V 211. maxima, O 195. Nuttalli, 5, O 349.

patula, 12, 20, 22, 26, 72, 87, 124, 154, 251.

sodalis, 73.

## Macoma

calcarea, 70, 125. concinna, 202. crassula, 235. Dombeyi, 202. edentula, 12, 70, 113, 125. edulis, 12, 86, 125. (fvar.) expansa, 88, 125. Fabricii, 125. fragilis, 125. fusca, 167. inconspicus, 12, 18, 20, 86, 125, 167. indentata, 97, 125. inquinata, 11, 80, 97, 125, 168. lata, 70, 88, 125. hasuta, 20, 22, 26, 71, 125. proxima, 70, 88.

## Macoma

secta, 12, 22, 26, 86, 125, 151.
solidula, 39, 125, 204.
sordida, 70.
Suesoni, 70.
tenera, O 221.
tersa, 125.
yoldiformis, 88, 97, 125.

## Macroceramus

polystreptus, 45.

## Macrocyclis

Newberryana, 157. (†var.) sportella, 157. Vancouverensis, 157.

## Macron

Kellettii, 40, 102, 150, 151. lividus, 100, 150, 151.

## Mactra

alata, P 50. albaria, 76. angulata, O 229, O 246, O 282, O 289, O 297, O 304, P 52, 8 161. angusta, O 287, O 289, O 304. Brasiliana, O 211, O 246, P 51. Californica, 26, O 196, O 229, 0 232, 0 287, 0 289, 0 304, O 349, V 214. canaliculata, O 364. carinata, O 364, P 50. carinulata, O 289, P 52. Diegoana, 76. donaciformis, O 289. elegans, O 174, O 227, O 280, 0 282, 0 284, 0 289, 0 304, O 352, O 364, U 200. exoleta, O 208, O 211, O 227, 0 232, 0 246, 0 280, 0 364, P 50, P 51, P 52, U 200, V falcata, O 209, O 232, O 304. fragilis, O 243, O 246, O 304, O 363, P 51. Gabiotensis, 82. goniata, O 287, O 304, P 52.

laciniata, O 284, O 304, S 161.

## Mactra

maxima, 0 192. mendica, O 227, P 549, U 200. modesta, 152. nasuta, O 211, O 232, O 304, 0 352. Nuttallii, O 194. oblonga, O 246, P 51. ovalina, O 246, P 51. ovalis, O 219, O 221, O 223, 0 304. pallida, 0 175, 0 304. planulata, 25, O 196, O 304, 0 349, ♥ 214. ponderosa, O 221. similis, O 178, O 192, O 221. stultorum, P 531. subglobosa, O 175. undulata, U 200. velata, 204, O 280, O 295, O 304. Mactrella alata, 154. exoleta, 29, 126, 204. carinata, 154.

## lacinata, O 284, S 161.

Mæra Gouldii, 301. salmonea, 113, 125, 235.

## Malea

crassilabris, O 171, O 178, O 238, 0 269. latilabris, O 171, O 238, O 269, 0 292, 0 337. ringens, 24, 34, 80, 110, 152, 153, 166, 179, 0 171, 0 238, O 282, O 288, O 337. ringens, var. 0 238.

## Mamma

uberina, P 452.

## Mangelia

acuticostata, 36, 184, O 284, O 332, P 401, S 162. acuticostata, var. subangulata, O 259, P 400. albolaqueata, 273. angulata, 23, 89, 144, 284.

## Mangelia

attenuata, 144. сегеа, 24, 294. concinna, O 332. crebricostata, 114, 144, 242. exigua, 184. gemmulosa, 184. hamata, 24, 293, 294. interfossa, 114, 144, 242. levidensis, 89, 144. neglecta, 36, 184, O 272, O 332, P 401, S 163. plumbea, 0 332. pulchella, 24. rigida, S 163. — var. fuscoligata, O 284, B 163, S 164. septangularis, 144 striosa, O 284, S 163. subdiaphana, 24, 104, 154, 218. sulcata, 34, 259.

sulcosa, 185, O 272, O 332. tabulata, 114, 144, 242. variegata, 23, 144, 284. (?variegata, var.) nitens, 144, 284.

## Margarita

acuminata, 47. acuticostata, 98, 139. albula, 73. arctica, 19, 73, 322, O 216, 0 220, 0 223, 0 321. argentata, 71. calostoma, 18, 40, 139, O 286, 0 321. cidaris, 113, 139, 238. var. conica, 139. costellata, 18, 40, 47, 92. Grænlandica, O 216. helicina, 71, 113, 139, 169,_O 216. Hillii, 28, O 240. ianthina, 73. inflata, 89, 139. lirulata, 82, 139. mustelina, 73.

Margarita obscura, 70.

var. obsoleta, 139.
pupilla, 25, 40, 47, 92, 98, 139.
purpurata, 28, O 240.
pusilla, 89.
(fvar.) salmonea, 98, 139.
Schantarica, 73.
sordida, O 216.
striata, 47, 71, O 176, O 216,
O 223, O 321.
var. subelevata, 139.
sulcata, O 216, O 223, O 321.
var. tenuisculpta, 89, 139.
umbilicalis, O 176.
undulata, 47, 98, 139.
Vahlii, 89, 139, 169.

## Margaritana

margaritifera, 85, 116, 120, 164.

## Margaritiphora

albina, P 149.
barbata, 199.
fimbriata, 27, 50, 107, 153, 199,
O 161, O 249, O 277, O 282,
O 311, P 550.
margaritifera, P 149.
Mazatlanica, 199, O 249, O 296,
O 311, P 149, P 196.
radiata, P 149.

## Marginella

cœrulea, O 363: [should be—]
cœrulescens, 15, 24, 35, 177,
O 189, O 339, O 365.
curta, O 296, O 339.
cypræola, 45, O 267, O 285,
O 339.
glans, 15, 177.
granum, O 267
imbricata, O 226, O 285, O 297,
339.
Jewettii, 23, 147, 287, O 228,
O 339, O 349, U 207.
Lavalleana, P 461.
margaritula, O 261, O 339,
O 364, P 462.
minima, O 364, P 461.

## Marginella

minor, 110, 147, 177, O 261, O 267, O 339, O 364, P 461. ovuliformis, O 261, O 364, P 462. polita, 23, 24, O 261, O 339, P 462. prunum, 7, 15, 177, O 189, O 206, O 282, O 339, O 363, O 365. regularis, 23, 147, 287. sapotilla, 15, 35, 177, O 189, O 206, O 231, O 267, O 282, O 339, O 363. subtrigona, 23, 147, 287.

## Marinula

Recluziana, O 275.

## Marmorostoma

planospira, 35. undulata, 10.

## Martesia

intercalata, 114, 123, 151, 0 244, 0 299, P 13.

## Megalomastoma

simulacrum, 45.

# Meioceras. See Mioceras.

Melampus acutus, O 315.

> Adamsianus, S 161. bidentatus, P 178. Bridgesii, O 284, O 315, S 161. concinnus, O 315.

fasciatus, 44. infrequens, O 315. olivaceus, 107, 133, 151, 159,

O 233, O 251, O 284, O 315, O 351, P 178.

Panamensis, O 315. stagnalis, O 315.

Tabogensis, O 315. trilineatus, O 315.

## Melania

bulbosa, 163, O 209, O 325. Buschiana, 51. exigua, 163, O 283. fusca, 163. Gouldii, O 325. Melania Largillierti, O 265. maxima, O 286. Menkeana, 163. Newberryi, 120, 163. nigrina, 51, 120, 163. plicata, O 211, O 325. 0 210, 0 213, 0 325. polygonata, O 286. rudens, 92. seminalis, 120. Scipio, 51. Shastaënsis, 120, 163. Shortaënsis, 84. 0 325. siliqua, O 209. striata, 6, 162. subnodosa, O 265. 0 325. Warderiana, 163. Melaraphe fasciata, P 351. phasianella, 31, 37, 192. Meleagrina fimbriata, O 296, P 550. Mazatlanica, P 149, P 151. Melongena occidentalis, 35. Membranipora calpensis, P 2. denticulata, O 243, O 298, P 1. Flemingii, 34, 256. gothica, O 243, O 298, P 2. Lacroixii, P 2. Rozieri, P 2.

Ducatellii, 77.

orientalis, 69.

perlaminosa, 77.

occata, 120, O 206, O 211, O 325. plicifera, 18, 84, 92, 116, 163, silicula, 84, 92, 163, O 209, Wahlamatensis, 163, O 211, Savartii, P 2. Menetus opercularis, 161. Mercenaria

Mercenaria Stimpsoni, 69, 73. Meretrix Californiana, 75. Dariena, 77. impudica, P 70. petichialis, P 70. Poulsoni, 75. Tularena, 75. uniomeris, 75. Uvasana, 75. Mesalia lactea, 89, 141. lacteola, 89, 93, 141, 166, 169. subplanata, 89, 141. tenuisculpta, 98, 141. Mesembrinus excelsus, 158. inscendens, 158. pallidior, 158. Mesodesma rubrotinctum, 78. Mesodon Columbianus, 157. devius, 157. Meta cedonulli, 53. coniformis, 53. Dupontiæ, 53.

ovuloides, 53. Metula Hindsii, O 342. Miltha Childreni, 106. Mioceras cornubovis, X 439, X 443. cornucopise, X 429, X 439, X

440, X 443.

nitidum, X 438, X 443. Miodon orbicularis, 236. prolongatus, 97, 113, 128, 168, 236.

Miralda laounata, 33, P 414. quinquecincts, 33, P 414.

72 Miralda scalariformis, 33, P 413. amphorella, P 461. attenuata, O 188, O 339. auriculoides, O 231. babea, O 171, O 339. Belcheri, O 206, O 339. Chilensis, 13, 147. crassidens, O 175. crenata, 110. Dupontii, O 231, O 239, O 261, P 466. effusa, O 185, O 338. foraminata, O 231. funiculata, 24, 177, O 267, O gausapata, O 186, O 339, O 361. granulosa, 177, O 364. gratiosa, O 186, O 339, O 361 Haneti, 62. Hindsii, O 207, O 208, O 339. lens, 24, 28, 177, O 231, O 239, O 261, O 267, O 338, P 460, P 545. maura, 13, 147, 170, 0 201, O 338, O 349, V 227. muricata, O 339, O 361. nucleola, 24, 110, 177, O 267, 0 338, 0 364. orientalis, 13, 147. pica, O 231. solitaria, 110, 177, O 267, O 284, 0 339. sulcata, O 188. tristis, 177, O 185, O 267, P 461. cribraria, P 487. Mitromorpha aspera, 144. filosa, 144, 284. offusa, 144. Modelia striata, 118, 240. Modiola Adamsiana, 38.

Modiola attenuata, P 124. Brasiliensis, 18, 23, 38, 47, 50, 152, 153, 199, O 248, O 277, O 309, O 363, P 121, P 122, P 550. Brasiliensis, var. mutabilis, O 248, P 122. Californiensis, O 174. capax, 23, 27, 38, 50, 78, 85, 107, 129, 152, 153, 199, O 197, 0 232, 0 236, 0 241, 0 248, 0 282, 0 284, 0 296, 0 351, 0 352, 0 353, 0 358, 0 361, O 366, P 121, V 218. caudigera, O 249, P 127. Chenuana, P 123. cinnamomea, 63, P 129. contracta, 76. cultellns, O 203, O 223. discrepans, O 211. divaricata, O 234. elongata, O 211, O 309. flabellata, 13, 18, 85, O 213, 0 309. - var. 130. flabellum, O 234. fornicata, 22, 129, 280. Gibbsii, O 218. grandis, O 218. Guyanensis, O 248, P 122. modiolus, 22, 26, 85, 129, 169, 0 218, 0 223, 0 309, 0 366, P 121. nigra, O 223. nitens, 21, 50, 102, O 227, O 309, 0 349. opifex, 123. papuana, O 218. plumula, P 125.

recta, 13, 18, 22, 76, 129, O 197,

semifusca, 38, 47, 199, O 248,

O 229, O 349, V 218.

semilævis, O 236, P 539. spinifera, P 121.

O 277, P 122.

## Modiola subpurpurea, 21, 50. sulcata, P 119. vernicosa, 0 223. vulgaris, O 211. **Modiolaria**

corrugata, 71. discors, O 218. lævigata, 88, 130, 169, O 218. lævis, O 218. marmorata, 88, 130, 169. nigra, 71, O 218, O 221.

vernicosa, 0 218, 0 221. Modulus carchedonicus, O 286, O 364, P 352. catenulatus, 27, 109, 191, O 230, O 233, O 257, O 274, O 326, O 364, P 353. cerodes, 152. disculus, 27, 36, 192, O 202, 0 225, 0 226, 0 230, 0 233, O 257, O 326, O 364, P 353, U 205. dorsuosus, 21, O 226, O 228, O 230, O 257, O 326, P 353, U 205.

duplicatus, O 226.

---- var. O 257, P 253. lenticularis, 21, O 226.

lividus, O 274.

trochiformis, O 202, O 257, P

## unidens, P 352. ?Mormula

# unifasciata, 33, P 433.

Monoceros brevidens, 13, 149, O 201, O 285, O 340, **V** 229. brevidentatum, 25, 179, O 191, 0 231, 0 235, 0 269, 0 283, 0 341. cingulatum, 29, 48, 180, O 171, O 188, O 238, O 269, P 457, P 458, P 542.

cornigerum, O 341.

## Monoceros

crassilabrum, O 171, O 235. cymatum, 48, O 174, O 177, 0 235, 0 285, 0 294. engonatum, 83, 102, 149, O 201, O 340, O 349, V 228. globulus, O 235. grande, O 177, O 188, O 204, O 294, 0 341, 0 361. lapilloides, 13, 83, 149, O 201, O 231, O 340, O 349, V 229. lugubre, 10, 14, 48, 76, 151, 153, 0 177, 0 178, 0 285, 0 294, 0 341. — var. 152. maculatum, O 177, O 201, O

341, V 229. muricatum, O 191, O 234, O 238, P 458, P 476, P 542.

plumbeum, 35. punctatum, 83, 149, O 177, O 201, O 231, O 235, O 293, V 229.

punctulatum, O 201, ♥ 229. frar. spiratum, 149.

tuberculatum, O 234, O 341, unicarinatum, 83, 149, O 201,

0 231, 0 235, 0 285, 0 293, V 229.

## Monodonta

carchedonia, P 352. catenulata, O 238. fusca, 35. modulus, P 353. pyriformis, O 228, U 204. Sayii, O 286.

## Montacuta chalcedonica, 34, O 354, P

dionæa, 257. divaricata, 73.

531.

elliptica, O 248, O 308, P 113. obtusa, 34, 257.

subquadrata, O 248, O 308, P 113, P 114.

## Mopalia

acuta, 134.

Blainvillei, O 318, O 351.

Grayii, 89, 134.

Hindsii, 13, 26, 89, 92, O 318.

imporcata, 89, 134.

lignosa, 40, 134.

Merckii, 134.

Montereyeneis, 19, 134.

muscosa, 23, 26, 92, 134.

Simpsonii, 134, O 318, O 349.

sinuata, 89, 134.

Stimpsoni, 72.

(?var.) Swanii, 113, 134, 238.

vespertina, 134, O 318, O 348.

Wosnessenskii, 134.

## Morrisia

Hornii, 118.

## **M**ormus

pilula, 158. sufflatus, 158.

## "Morum

xanthostoma, O 287.

## `Morvilia

zonata, 71.

## Mouretia

Peruviana, 9. stellata, O 185.

## Mucronalia

involuta, 33, 259, P 439. solitaria, 33, 37.

## Mulinia

angulata, 23, 27, 76, 106, 204, O 246, O 280, P 52. carinulata, 152. densata, 80. donaciformis, 204, O 246, O 280, P 52, P 549. exalbida, O 295. ventricosa, 204, O 246, O 280, P 51.

## Mumiola

nodosa, 33, P 417. oblonga, 33, P 418. ovata, 33, 39, P 417. rotundata, 33, P 418.

## Murez

acanthopterus, O 177. aculeatus, O 179, O 188, O 238, O 271, P 527. alatus, O 173, O 177. alveatus, O 188, P 527. ambiguus, O 177, O 237, O 238, O 264, O 271, P 521, P 543. amplustris, 4. anceps, 0 182. argus, 4, 0 177. argus, var. P 455. armatus, O 226, O 287, O 344. Belcheri, 15, 60, 182, O 205, O 351. bicolor, 119, O. 172, O 234, O 235, O 238, O 264, O 352, P 524, P 525, P 543. - var. 45. Boivinii, O 182, O 293. brassica, O 174, O 176, O 177, 0 234, 0 236, 0 238, 0 264, P 523, P 537, P 543. Californicus, O 205. centrifuga, 99, 0 205. ceratus, O 179, P 457. clathratus, O 217. corneus, O 217. corrugatus, O 294. crassispina, P 518. crispatus, 5, 8. dubius, 182, O 179, O 188, O 238, O 271, P 526, P 543. ducalis, O 176, O 236, O 238, O 264, P 523. erinaceus, P 528. erinaceoides, O 172, P 527. - var. indentatus, O 264. erosus, 182, O 182, O 271, O 345, 0 364. erythrostoma, 45, O 238, O 264, P 524. ferrugineus, 7, O 173, O 217. festivus, 83, 0 205. fimbriatus, O 287. foliatus, 3, 5, 6, 83, O 173, O 177,

0 235, 0 241, 0 293.

## Murex

foveolatus, O 205. funiculatus, P 519, P 520. glomus, 4, 5. hamatus, O 208. hippocastanum, O 264, P 524. horridus, O 182, O 293, O 345. humilis, 0 208. imperialis, 45, O 178, P 524. incisus, 0 208. lactuca, 7, O 173, O 217, O 223. — var. 0 173. lappa, O 182, O 238, O 264, P 526, P 543. lima, 61. lividus, O 345. lyratus, 5. macropterus, O 203. melanoleucus, 42. melanomathos, 6, 0 271. messorius, O 238, O 264, O 294, O 364, P 519, P 520, P 543. - var. P 519. miliaris, P 485. monoceros, O 201, O 293. monodon, 83, O 173, O 174, 0 177, 0 217, 0 223. montacilla, 0 294. multicostatus, 7, 0 173, 0 217. nigrescens, 25, O 264, O 294, P 519, P 520. nigritus, 60, 0 177, 0 237, 0 238, O 264, O 354, P 521, P 523, P 530, P 543. 🗕 var. O 238. nitidus, O 182, O 264, P 523. nodatus, 10. nucleus, O 182, O 345, O 361. Nuttalli, O 201, O 231, O 293. nux, O 191, O 287, P 484. oxyacantha, O 182, O 208, O 294. pauxillus, O 264, O 287, P 528. peritus, O 205. Peruvianus, 7. phyllopterus, 48, O 177.

## Murex

pinniger, O 235. plicatus, 28, 112, O 185, O 234, O 263, O 345, O 352, P 518. pomum, var. 45. ponderosus, 119. princeps, O 264, P 124, P 523, P 525. pumilus, O 182, O 345, O 361. purpura, 4, 5, O 177, P 485. radix, 6, 182, O 174, O 177, O 271, O 283, P 521, P 522. radicatus, O 205, O 264, P 526. rectirostris, 182, O 271, O 294, O 345, P 519, P 520. recurvirostris, 25, 28, 112, 182, O 182, O 271, O 345, O 364, P 519, P 520. - var. lividus, O 264, P 519. regius, 182, O 172, O 174, O 177, 0 179, 0 264, 0 271, 0 283, P 524. rigidus, 10, O 179, O 188. salebrosus, 182, O 179, O 238, O 271, O 293, P 485, P 543. salmo, 10. sanguineus, 10. sexcostatus, 35. ternispina, O 238, P 518, P 543. tortuus, 14. trialatus, 5, 0 192. tricolor, 119, O 172, O 264, O 271, P 525. trigonularis, O 177. tripterus, 5, 6, 0 173. uncinatus, P 335. unidentatus, O 238, P 519, P 543. vibex, 183, O 182, O 271. vittatus, 183, O 271. vitulinus, O 177, O 262, P 485, P 486.

## Muricidea

alveata, 155, O 345. Californica, 149.



```
76
                           INDEX OF SPECIES.
                                       Mytilus
  Muricidea
                                            Adamsianus, 41.
      dubia, 25, 28, 112, 182, 274, O
                                            bicolor, P 122.
       264, O 345, P 526.
      erinaceoides, O 345.
            – var. indentata, O 264, O
                                            borealis, O 219.
        345, P 527.
      erosa, 182.
      lactuca, O 345.
      lappa, O 264, O 345, P 526.
      pauxillus, O 264, O 345, P
                                              O 351, V 219.
        528.
      perita, O 345.
      pinnigera, 25.
                                            cofuscus, 73.
                                            Cumingianus, 49.
      radicata, 0 345.
      var. squamulata, 274.
      vibex, 25, O 345.
      vittata, 183, O 345.
  Musculus-polylepto-ginglymus
                                              0 284, 0 309.
      Arca-Nose, 33.
                                                 - var. 102.
· Mya
      abrupta, 165, O 367.
                                            flabellatus, 18.
      arenaria, 69, 70, 74, O 219,
                                            frons, 6.
        0 222, 0 223, 0 300.
      byssifera, O 221.
      cancellata, 87.
                                              P 119, U 202.
      hyalina, O 222.
                                            Guiaënsis, O 277.
      Japonica, 74.
      Montereyana, 80.
                                            humerus, 75.
      præcisa, 17, 123, 0 209, 0 210,
                                            Inezensis; 81.
        0 219, 0 300.
                                            latissimus, O 197.
      suborbicularis, P 105.
      subsinuata, 80.
      truncata, 17, 70, 123, 168, O 209,
        0 210, 0 219, 0 222, 0 223.
      Uddevalensis, O 222.
                                              P 120, U 202.
  Myrtæa
                                            normalis, O 197.
      lenticula, 165.
                                            notatus, O 219.
  Mysia
      tumida, 12, 78, 129, O 196, V
                                            Pedroanus, 76.
      usta, 73.
  Mytilimeria
                                            retusus, O 219.
      Nuttallii, 26, 87, 124, O 194, O
         301, 0 349, ♥ 211.
                                            rugosus, O 221.
  Mytilus
                                            Sallei, 49.
                                            splendens, 72, 73.
      abbreviatus, O 219.
```

bifurcatus, 12, 49, 129, O 198, O 226, O 309, O 349, V 219. Brasiliensis, U 202. Californianus, 5, 22, 26, 72, 85, 129, 0 192, 0 197, 0 212, 0 234, O 284, O 309, O 349, cinnamomeus, P 129. edulis, 18, 22, 26, 70, 72, 76, 78, 85, 129, 151, 169, 0 192, 0 197, 0 212, 0 219, 0 223, – var. latissimus, V 219. glomeratus, 26, 49, 102, 129, 0 212, 0 227, 0 234, 0 309, Guyanensis, P 122. incurvatus, O 219. lithophagus striatus, P 126. multiformis, 27, 41, 106, 199, 200, O 248, O 309, P 118, palliopunctatus, 49, 106, O 248, O 282, O 309, P 118, P 119. pellucidus, O 197, O 219. ropan, O 249, P 129.

## Mytilus

spatula, O 236, P 121, P 538. subsaxatilis, O 219. tenuiaratus, P 118. trossulus, 18, 78, 129, O 212.

Myurella

albocineta, 109, O 258, P VI., P 384, P 386. elata, 177. frigata, O 360. Hindsii, O 258, P 385, P 386. larvæformis, 177. rufocinerea, 32, O 258, P 386. simplex, 23, 100, 143, 285... subnodosa, 109, O 258, P 386. tuberculosa, 177. variegata, 109, 153.

## Nacella

Asmi, O 318. depicta, 21, 136, O 227, O 229, 0 318, 0 349, U 204. incessa, 23, 26, 136, O 229, 0 318, 0 349. instabilis, 84, 136, O 318. paleacea, 21, 23, 136. peltoides, 31, 104, 213. subspiralis, 98, 136. fvar. triangularis, 98, 136. Naranio

(Narinio)

scobina, O 244, O 300, P 529.

## Narica

anomala, P 355. aperta, 104, 215. cryptophila, O 254, O 323. Diegoana, 76. insculpta, 273. ovoidea, O 228, O 230, P 355, U 205.

Narinio. See Naranio. Nassa

> acuta, 35, O 263, O 342, O 366, P 497, P 498. ambigua, 155, O 364. angulifera, O 186, O 342, O 361.

Californica, 155. canescens, 35, 178, O 268, O collaria, 25, 155, O 231, O 268, 0 342. complanata, 25, 35, 151, 179, 0 231. Cooperi, 28, 100, 148. corpulenta, 25, 28, 111, O 231, 0 268, 0 342. costellata, O 167. crebristriata, 25, 34, 35, 179, O 263, O 342, O 351, O 366, P 499. crenulata, O 222. decussata, 35, 178, P 497. elegans, 17, 100, 148. exilis, 35. festiva, O 185, O 268, O 342. fossata, 25, 27, 100, 148, O 209, 0 342. gemmulata, 69. gemmulosa, 178, O 263, O 268, O 342, P 498. Gibbesii, 17, 83, 148. glauca, O 268, O 342. incrassata, O 167, P 499. insculpta, 99, 102, 148. interstriata, 76, 100. lunata, 76. luteostoma, 28, 178, O 176 0 231, 0 225, 0 262, 0 268 O 283, O 342, O 351, P 494, P 496, P 542. mendica, 17, 23, 25, 27, 28, 76, 83, 148, 168, 0 209, 0 212, 0 342, 0 348. mæsta, 0 206. nodicincta, 25, 153, O 186, O 342. nodifera, 178, O 185, O 268 O 342, O 361, P 496. nodocincta, O 297, O 361. nodulifera, 256, P 496. Northiæ, 48, 61.



## Nassa

obsoleta, 179. pagodus, 25, 35, 178, O 268, O 342, P 552. – var.) acuta, 178, O 263, P 498. pallida, O 185, O 342. Panamensis, 35, 179, O 268, 0 342. paupera, 35, 100, 179. Pedroana, 76. perpinguis, 23, 27, 100, 147, O 206, 0 231, 0 342, 0 349. polygonata, P 497. proxima, 34, 35, 179, O 268. scabriuscula, 25, 28, 35, 179, 0 185, 0 268, 0 342. Stimpsoniana, 25, 179. striata, 35, 100, 179, O 268, 0 342. tegula, 25, 111, 148, 151, 152, 0 192, 0 262, 0 283, 0 342, O 351, P-496, P 497. - var. nodulifera, O 263, P 496. tiarula, O 192, P 497. trivittata, 76, 83, 148, 168, 0 versicolor, 25, 34, 35, 111, 179, 0 231, 0 268, 0 342, 0 364, P 499. - var. O 268. Wilsoni, 35, 179, O 268, O 342. Woodwardi, 17, 28, 148.

## Natica

495.

alabaster, O 261, O 292, P 452.
alapapilionis, 110.
algida, 17, O 210, O 212.
alveata, 75, 77.
aperta, O 216, O 220, O 223.
Beverlii, 9.
bifasciata, O 192, O 234, O 235,
O 292, O 296, O 336, O 352.
Bonplandi, 7, O 170.

xanthostoma, O 176, O 262, P

### Natica

borealis, O 177, O 216, O 220. var. Californica, 193, O 201, 0 336. canrena, 110, O 235. catenata, 24, 110, 155. caurina, O 209, O 213, O 348. Chemnitzii, O 202, O 211, O 235, 0 236, 0 240, 0 260, 0 274, O 292, O 336, P 449, P 450, V 227. clausa, 9, 25, 71, 72, 147, 169, 322, 0 176, 0 216, 0 220, 0 223, 0 335. consolidata, O 216, O 220. Elenæ, 40. excavata, 40, O 282, O 336, 8 165. flava, 19, O 216, O 223. Gallapagosa, O 176, O 185, O 274. geniculata, 77. gibbosa, 75. glauca, O 172, O 190, O 202, O 237, P 540. Gouldii, U 216, O 220. Grænlandica, O 216. Haneti, 40, 194, O 230, O 274, 0 336. helicoides, 8, 0 223. herculea, 84, O 216, O 224. heros, O 211. ianthostoma, O 203, O 216. impervia, 0 348. Inezana, 82. intemerata, O 286. intermedia, P 448. iostoma, O 235, O 261, P 449, R 450, P 536. lactea, O 216. Lewisii, 84, 0 209, 0 211, 0 213, 0 216, 0 284. lineata, 40, S 165. lurida, 37, 193, O 260, O 274, P 448. Moquiniana, 62. maroccana, 13, 27, 37, 63, 69,

## Natica

110, 193, 0 201, 0 202, 0 211, 0 230, 0 234, 0 236, 0 237, 0 261, 0 274, 0 296, 0 336, 0 352, 0 353, 0 360, 0 365, O 366, P 448, P 450, P 536, P 540. -var. 24, O 230, O 235, 0 240, 0 282. - var. Californica, V 227. marochiensis, 63, 69, 0 261, Ocoyana, 77. ætites, 75. otis, 9, 37, 193, O 176, O 185, 0 274, 0 296. ovum, O 237, O 261, P 452, pallida, 9, 0 176, 0 216, 0 220, 0 223, 0 347. Panamensis, O 185. patula, 8, 0 170, 0 172, 0 190, O 202, O 234, O 237. perspicua, 0 292. plicatula, 0 201. Pritchardi, O 240, O 261, O 336, P 449, V 227. pusilla, O 216. rapulum, O 261, P 452. Récluziana, O 203, O 208, O 234, O 237, P 540. rugosa, 61. russa, 72. Salangonensis, O 274. sanguinolenta, O 203. saturalis, O 177, O 216. saxea, O 367. septentrionalis, O 216, O 220. semilunata, 75. severa, 72. Souleyetiana, 24, 37, 193, O 230, O 274, O 336. Taslei, 62. tessellata, O 261, P 449. nber, 7, 0 231, 0 274, 0 283,

O 292, O 351, P 452.

## Natica

uber, var. 0 292. uberina, O 185. unifasciata, 37, 72, 193, O 230, 0 261, P 448. unimaculata, 0 292. variolaris, 35. vitrinelloides, P 246. virginea, 37, 193, O 274. zonaria, 24, 27, 110, O 231, 0 336.

## Naticina

scopulosa, O 367.

# Nautilus

angustatus, O 367. zigzag, O 367.

## Navarchus

inermis, 95, 133.

## Navea

subglobosa, 121.

## Neaplysia

Californica, 133.

## Neæra

costata, O 207, O 301. didyma, 0 207, 0 301. pectinata, 87, 88, 123.

## Neptunea

(Neptunæa)

badia, 60. castanea, 60.

harpa, 60.

Icelandica, 73.

incisa, 18.

terebralis, 73.

## Nerita

Bernhardi, 24, 27, 108, 152, 194, 0 233, 0 237, 0 254, 0 274, 0 282, 0 322, 0 352, 0 364, P 257. costata, O 274. Deshayesii, 194, O 254, O 274, O 322, P 255, P 256. elegans, O 230. fulgurans, 61. funiculata, O 237, O 254, O 322, P 257, P 540.

Norita glaucina, P 448. maroccana, P 448. marochiensis, O 261, P 448. multijugis, O 233, O 236, O 237, O 254, P 255, P 536. ornata, 48, 194, O 179, O 237, O 254, O 274, O 322, P 255, P 256, P 540. papilionacea, O 170. patula, 0 179. præcognita, O 283. scabricosta, 24, 27, 48, 62, 108, 152, 194, 0 179, 0 230, 0 233, O 235, O 254, O 274, P 255. scabriuscula, O 192, O 237, O 282. . tessellata, O 364, P 257.

## Neritina

textilis, O 170.

alata, O 176. Californica, O 291, P 258. cassiculum, O 4, O 237, O 254, O 275, O 322, P 258, P 540. faba, P 258. Fontaineana, P 259. globosa, 24, O 182, O 322. Guayaquilensis, 24, 194, O 274, O 322, P 259. harpæformis, O 230. intermedia, 24, 194, O 182, O 274, 0 322. - var. O 182. latissima, O 182, O 322. liasina, P 551. Listeri, O 289, O 291, O 322. Michaudi, O 189, O 291, O 322. picta, 24, 27, 0 4, 0 160, 0 182, 0 192, 0 233, 0 235, 0 237, 0 241, 0 254, 0 275, 0 283, O 322, O 352, O 364, P 258, P 259, P 540. pulchra, O 188, O 322. pusilla, P 237. tritonensis, O 182. virginea, O 364, P 258.

Netastoma
(Netastomella)

Darwinii, 15, 26, 91, 121, 123, 170, 250.

Neverita
Chemnitzii, P 449.
glauca, 110, 0 337.
helicoides, 0 208.
patula, 24, 27, 0 208, 0 337.

Reclusiana, 147, 151, 152, 153,

Niothia genmulosa, P 498.

0 337, 0 349.

## Nitidella

cribraria, 25, 28, 53, 111, 180, 220, O 262, O 269, O 296, O 341, O 363, O 365, O 366, P 487, P 493, U 208. densilineata, 105, 221. gausapata, 92. Gouldii, 21, 23, 53, 89, 149, O 228, O 341, O 349, U 208. guttata, O 363, O 365. millepunctata, 105, 155, 220, 221. pulchrior, O 270, O 341.

## Noetia

reversa, 24, 31, 154, 155, 200. **Northia** pristis, 25, 48, 155, O 294, O 344.

pristis, 25, 48, 155, O 294, O 344 serrata, 61, 179, O 344. Novaculina

## Nucula

Caribbea, 205.

arctica, O 175, O 219, O 223.
castrensis, 14, 75, 91, O 207, O
219, O 223, O 310.
cœlata, O 207, O 311, O 349.
Cobboldiæ, 91, O 207.
costellata, O 182.
crispa, O 207, O 311.
decisa, 75.
divaricata, 14, 75, 91, 165, O 207,
O 367.
Elenensis, 200, O 277.
excavata, O 207, O 311.

```
Nucula
                                     Odostomia
    exigua, 100, 0 249, 0 277, 0
                                          gemmulosa, P 415.
      311, P 145.
                                          var. Gouldii, 144.
                                          gravida, 23, 144, O 228, O 230,
    gibbosa, O 182.
         — var. O 182.
                                            O 296, O 333, O 349, P 413,
    impressa, O 367.
                                            U 207.
                                         inflata, 23, 114, 144, 145, 285.
    insignis, 73.
                                         lamellata, O 259, O 333, P
    Lyallii, 91.
    lyrata, O 207, O 311.
                                            411,
                                         mamillata, 36, 259, O 259, O
    mirabilis, 73, 91.
    polita, 200, 0 182, 0 229, 0
                                            334, P 411, P 412.
                                         nuciformis, 114, 144, 243.
      277.
                                          obeliscus, O 230.
    pygmæa, 0 223.
                                         satura, 114, 144, 243.
Obeliscus
                                         straminea, 110, 145, 314.
    achates, 21, 24, O 333, U 206.
                                         sublirulata, 145, O 259, O 333,
    Adamsii, 33, 37.
                                            P 410.
                                          subsulcata, O 259, O 333, P 411.
    bicolor, O 296.
    clavulus, 21, O 289, O 333,
                                         tenuis, O 259, O 334, P 412.
      U 206.
                                         tenuisculpta, 114, 145, 243.
    conicus, 193, O 259, O 333, P
                                          wallata, O 259, O 334, O 364,
                                            P 411, P 412.
      409.
                                     Odontidium
    hastatus, 218.
                                         levissimum, X 436.
    variegatus, 99, 104, 144, 219.
                                         rugulosum, X 415, X 425, X
Ocinebra
    var. aspera, 149.
    erinaceoides, 25.
                                     Œdalia
    interfossa, 89, 92, 114, 149.
                                         scintillæformis, 97.
    lurida, 25, 90, 92, 114, 149.
                                         subdiaphana, 125, 302.
    var. munda, 149.
                                     Oliva
    nux, P 484.
                                          aldinia, 63.
    Poulsoni, 23, 149, 151, 316.
                                         angulata, 9, 24, 35, 62, 153, 177,
Octopus
                                            0 174, 0 231, 0 238, 0 261,
    megalocyathus, 118.
                                            O 268, O 292, P 463, P 464,
                                            P 465, P 544.
    punctatus, 99, 118, 150.
Odostomia
                                          anazora, O 239, O 292, P 545.
    achates, O 228, O 230, U 206.
                                          araneosa, 35, 63, 178, O 261,
    æquisculpta, 219.
                                            O 268, O 292, O 364, P 466.
    var. avellana, 144, 243.
                                          aureocincta, 35.
    canaliculata, P 411.
                                         auricularia, 63.
    clavulus, O 228.
                                          azemula, 62, 0 292.
    conoidea, O 228.
                                          bætica, var. 63.
    conoidalis, 243.
                                          biplicata, 8, 10, 25, 79, 0 208,
    crebristriata, T 170.
                                            0 231, 0 235, 0 284, 0 292,
                                            O 352.
    delicatula, 219.
    dolioliformis, 144.
                                          Brasiliensis, 63.
        6
```

:

Oliva caldania, 62, 63. candida, 63. columellaris, 8. cruenta, O 282. Cumingii, 11, 28, 34, 63, 153, O 191, O 292, O 339, P 464. dama, 63, O 292. Deshayesiana, 63. Duclosi, O 261, O 339, O 366, P 467. eburnea, O 231, O 234, O 339. erythrostoma, 62. fimbriata, 63. fusiformis, 63, 178. gracilis, O 226, P 461. hiatula, O 262, P 472. inconspicua, 178, O 268, O 364, P 470. intertincta, 34, O 261, O 339, P 465. intorta, O 234. Julietta, 62, 154, 178, O 188, O 238, O 339, P 466, P 544. kaleontina, 154, O 188. Levariana, 6. lineolata, 63, 178, O 177, O 178, -O 292, P 471. literata, 178. mantichora, 62. Maria, 62. Melchersi, 28, 35, 111, 178, O 238, O 261, O 339, O 364, P 464, P 465, P 466, P 544. memnonia, 63. mutica, 63. nedulina, 63, O 292. nivea, O 268. obesina, 63, O 292. onisca, 63. oriola, 63. oryza, O 364. ozodona, 63, 0 292. pantherina, O 238. pellucida, 34, 35, 178, O 268. petiolita, O 231, P 470.

Oliva pindarina, 62, 63, O 292. plumbea, 0 231. polpaster, 11, O 188, O 191, O 339, P 464. ponderosa, 62. porphyria, 6, 24, 28, 48, 111, 152, 178, 0 168, 0 174, 0 234, 0 238, 0 268, 0 282, 0 339, O 350, O 352, P 463, P 544. propatula, O 265, V 209. purpurata, 63, O 262, P 471. razomola, 62, 63. reticularis, 62, 178, 0 292, P 464, P 465, P 466, P 467. - var. O 261, O 268, P 466. rufifasciata, 63, 0 231. Schumacheriana, P 467. selasia, 62, 63. semistriata, 9, 178, O 268. splendidula, 8, 0 188, 0 234, 0 235, 0 283, 0 297, 0 339, 0 351, 0 352. Steeriæ, 63. subangulata, 28, 34, 111, 152, P 464. tergina, O 234, O 236, O 239, O 292, P 469, P 537, P 544. testacea, 178, O 171, O 177, 0 231, 0 235, 0 239, 0 265, O 268, O 292, P 472, P 545, V 209. testacea, var. 63. tigrina, O 235. timoria, 63, 0 292. tisiphona, 63. todosina, 62. undatella, 10, 63, 178, 0 177, O 239, O 268, O 292, P 467, P 545. ustulata, 63. venulata, 35, 63, 178, O 192, 0 238, 0 261, 0 268, 0 292, O 339, P 464, P 465, P 466,

P 467, P 544.

- var. 0 268.

## Oliva

volutella, 63, 178, O 171, O 177, O 178, O 231, O 235, O 268. zonalis, O 171, O 177, O 236, P 468, P 471, P 537.

## Olivella

anazora, 23, 24, 111, 147, O 262, 0 339, P 469. aureocincta, 34, III. baetica, 23, 27, 76, 100, 147. biplicata, 13, 23, 27, 114, 147, 151, 0 339. bullata, U 207. columellaris, 178. conoidalis, O 364. dama, 34, 111, 178, O 262, O 339, P 471. eburnea, O 352. fulgida, 152. glandinaria, 13, 147, O 201, O 339, V 227. gracilis, 24, 28, 34, 155, 178. inconspicus, 24, 34, 111, 178, O 262, O 340, P 470. intorta, O 228, O 339, O 352, U 207. kaleontina, O 340, O 361. lineolata, O 192, O 262, P 471. mutica, P 470, P 472. oryza, 178, P 470. pellucida, 178, O 340. petiolita, 23, 147, O 364, P 469, P 470. - var. aureocincta, O 262, 0 339, 0 364, P 470. rufifasciata, 23, 147, O 339. semistriata, 24, 100, 178, O 340. tergina, 24, 28, 147, 178, O 262, O 340, O 352, O 364, P 469. undatella, 111, 178, O 262, O 350, P 468. Volutella, 24, 28, 178, O 282, 0 340, P 469. Zanoëti, 24. sonalis, 24, 111, O 262, O 339,

O 363, P 472.

## Ommastrephes

Ayresii, 99, 150. giganteus, 99, 150.

## **Omphalius**

ater, 13, O 200, V 224. aureotinctus, 25, 151, O 200, O 321, O 349, O 351, V 224. Brazilianus, P 234. brunneus, O 321, O 351. Byronensis, P 234. Californicus, O 163, O 233, O 297, P 235. coronulatus, 24, 27, 108, 191, 0 274. cruciatus, P 234. dentatus, O 229. euryomphalus, O 321. funebralis, 13. fuscescens, 27, 138, 151, O 200, O 233, O 321, V 224. globulus, O 253, O 321, P 236. ligulatus, 24, 34, 138, 191, 256, O 253, O 321, P 234, P 235, P 236. maculosus, O 321. marginatus, 13, 0 200, 0 321, **V** 224. mæstus, O 321, O 348. Panamensis, 24, 192. Pfeifferi, 21, O 227, O 321, U 204. reticulatus, O 321. rugosus, 27, O 321, O 352. - var. rufotinctus, O 253, P 233. viridulus, 24, 36, 155, 192, O 229, O 253, O 321, P 234, P 235, P 236.

## Onchidium

Carpenteri, 107, 159.

## Oniscia



# Onychoteuthis

Bergii, O 218, O 223, O 345. fusiformis, 99, 118, 119, 150. Kamtschatica, O 218, O 223.

## **Opalia**

attenuata, 244. australis, 244, 245. bicarinata, 244. borealis, 18, 99, 114, 146. bullata, 23, 146, 287. crassicostata, 244, 245. crassilabrum, 244. crenata, 105, 220, 244, 324. crenatoides, 105, 220, 244, ---- var.) insculpts, 25, 105,

146, 214, 322, 324. diadema, 244. funiculata, 37, 244.

McAndress, 244. Ochotensis, 114, 245. retiporosa, 99, 146, 244.

## Orbicula

Cumingii, 54, 205, O 280. Evansii, 55, O 287. Norvegica, 55. ostreoides, 55. striata, 55.

spongiosa, 99, 146, 244.

## **Orthalicus**

strigata, 54.

livens, 59, O 251, P 176. Mexicanus, O 250, P 177. princeps, P 177. undatus, 158, O 363, P 176. zebra, 93, 158, O 170, O 363, P 176. Ziegleri, O 251, P 177.

## Orthocera

glabra, X 436. imperforata, X 425. trachea, X 414, X 423.

## Oscilla

exarata, 33, 110, P 415. terebellum, 110. ziziphina, 33, P 416.

## Osilinus

ater, O 321, O 348, O 351. gallinus, O 321. - var. U 204.

## Osteodesma

bracteatum, 17, O 209, O 210. Californicum, O 231. corbuloides, O 222. diaphanum, O 287, Q 228. hyalinum, 119, O 209, O 210, nitidum, 17, O 226, O 228, U 199, Q 229.

## Ostrea

sequatorialis, O 191, O 250, P 157. amara, 27, 38, 107, 152, 199. bicolor, P 161. borealis, 74. Bourgeoisii, 119. Canadensis, P 160, P 550. Columbiensis, 107, 132, O 186, O 226, O 250, O 277, O 312, P 161. conchaphila, 38, 78, 132, 151, 152, 199, O 198, O 233, O 250, 0 277, 0 282, 0 312, 0 351, O 353, O 365, P 159, P 161, P 163, P 352, P 482, V 220. Cumingiana, O 250, O 312, O 352, P 163. edulis, 85, 132, 198, P 159, P 161. fvar. expansa, 101, 132, 306. frons, 6. gallus, 14. Heermanni, 76. iridescens, 107, 117, 198, 273, 274, 0 162, 0 226, 0 250, O 312, O 365, P 157, P 162, P 164. · var. laticaudata, 101, 132, 305. longirostris, P 160. lurida, 85, 92, 101, 132, 305. — var. 76. margaritacea, O 250.

## Ostrea

megodon, 14, 154. palmula, 24, 132, 199, O 233, O 250, O 282, O 312, P 163, P 550. Panamensis, 198. Panzana, 81. perna, P 150. plumula, O 351, O 353. prismatica, P 157. Puelchana, P 157. rufa, 38, 132, 198, 306, O 226, O 250, P 157, P 159. var. rufoides, 78, 101, 132, 306. spathulata, O 365, P 157. subfalcata, 76. subjecta, 81. Titan, 80. wespertina, 76. Virginica, 38, 78, 107, 132, 152, 306, O 226, O 250, O 277, O 312, O 363, P 159, P 160.

## Ovulum ) (Ovula)

aciculare, P 370. æquale, O 182, O 188. avena, 35, 176, O 182, O 267. Californicum, O 230, O 233, O 358, P 370. deflexum, O 239, P 545. emarginatum, 176, O 239, O 267, P 545. gibbosum, O 297, O 328, O 363. inflexum, O 182. neglectum, 35, O 267. patulum, P 375. secale, O 226. simile, O 226. subrostratum, O 364, P 370. uniplicatum, P 370. wariabile, 176, O 226, O 230, O 233, O 267, O 364, P 370. - var. 0 267.

## Pachychilus corvinus, 45.

Pachydesma

crassatelloides, 25, 26, 81, 114, 126, 151. Inezana, 81.

Pachypoma

gibberosum, 113, 137, 239. inæquale, 137.

**Pallium** 

Estrellanum, 80, 81.

## Paludina

balthica, O 220. carinata, O 170. Hindsii, 162. Kikxii, O 222. muriatica, O 220. nuclea, 162, O 207, O 297. Nuttalliana, 162. octona, O 220. pusilla, O 220. seminalis, 90, 120, 162, 211, 0 206. stagnalis, O 220. -, var. 0 220. tentaculata, O 222. thermalis, O 220. ulva, O 220. virens, 162.

## Paludinelia

aculeus, O 215, O 220, O 223. castanea, 241, O 215. cingulata, O 215, O 220, O 223. stagnalis, O 215, O 220, O 223, O 257, P 361.

## **Pandora**

arcuata, 228. bilirata, 80, 124, 232. brevifrons, 231, O 185, O 301. Ceylanica, 229. cistula, 231. claviculata, 124, 204, 225, O 287, O 301, Q 228. cornuta, 39, 204, 227, O 280, 301. Cumingii, 229. delicatula, 229, 230. depressa, 227.

```
86
                          INDEX OF SPECIES.
Pandora
                                      Parthenia
     discors, 228-
                                          exarata, 33, 36, 190, O 250,
     flexuosa, 230.
                                             O 334, P 415, P 416.
     inæqualis, 230.
                                          gemmulosa, O 364.
    Indica, 229.
                                          lacunata, O 334, P 414.
    nasuta, 226.
                                          quinquecincta, 33, 36, 189, 190,
    oblonga, 231.
                                            O 259, O 334, P 414.
    obtusa, 229, 230, 231.
                                          scalariformis, O 259, O 334,
    punctata, 12, 226, O 194, O 301,
                                            P 368, P 413, P 414, P 434.
       O 349, Q 228, V 211.
                                          ziziphina, O 259, O 334, P 416.
    radiata, 231.
                                      Patella
    rostrata, 230, 231.
                                          aculeata, P 268.
    striata, 232.
                                          æruginosa, 19, O 215, O 224,
    trilineata, 226.
                                            P 203.
    unguiculus, 230.
                                          ancyloides, 19.
    Wardiana, 230, 231.
                                          antiquata, P 297, R 3.
Pandorina
                                          Asmi, 19, 0 215, 0 223.
    arenosa, O 222.
                                          Araucana, P 200.
    flabellata, 73.
                                          auriculata, P 287, P 290, T 168.
                                          australis, P 299, R 3.
Panopæa
    abrupta, O 367.
                                          Barbadensis, P 215.
    Aldrovandi, O 209.
                                          cæca, 19, O 215, O 219, O 223.
    Faujasii, 123.
                                          var. concentrica, 19.
    fragilis, 73.
                                          calyptra, 3, 98.
    generosa, 73, 82, O 209, O 213,
                                          candida, 71, 0 219.
      0 300, 0 348.
                                          cassis, O 215.
    Norvegica, O 222, O 223.
                                          cerea, O 219.
                                          cinis, 48, O 173, O 290, P 207,
    reflexa, 82.
    var. sagrinata, 73.
                                            V 221.
Parapholas
                                          clypeaster, 48, O 172, O 290,
    acuminata, 29, O 194, O 244,
                                            P 208.
      O 265, O 299, O 366, P 12,
                                          conica, O 209.
      V 209.
                                          corrugata, O 252, O 291, P 200.
    bisulcata, 61, 121, O 265, V
                                          crepidula, O 255, P 284.
      209.
                                          Cumingii, O 173, O 290, P 203,
    branchiata, 0 366.
                                            P 208, V 221.
    Californica, 26, 119, 121, 123,
                                          deaurata, O 173, O 215, O 348.
      0 194, 0 299, 0 349, 0 351,
                                          diaphana, O 173, O 187, O 199,
      V 209, V 210.
                                            O 208, O 239, O 252, P 203,
    calva, 26, 29, 61, O 244, O 299,
                                            V 221.
      P 9.
                                          digitalis, O 223.
                                          discors, 60, 108, O 233, O 252,
    Janelli, 123.
    penita, 11, 251, O 194, V 210.
                                            O 282, O 291, P 200, P 201,
Parthenia
                                           P 206, P 210.
    armata, O 259, O 334, O 364,
                                          exarata, 9, O 173, O 290.
      P 415.
                                         fenestrata, O 173, O 198, O 291,
                                           P 207, V 221.
```

## Patella

fimbriata, O 209. floccata, P 203. fornicata, P 268. - var. P 268. Goreensis, O 255, O 363, P 284. grata, 72. incessa, 0 206. instabilis, O 209. lævigata, O 199. limatula, 49. livescens, 48, O 291. leucophæa, O 173, O 199, O 291, P 203, V 221. Magellanica, 91. mamillata, 13, 49, O 173, O 198, O 291, P 207, V 221. maxima, O 192, O 252, P 199. Mazatlandica, 9, 0 173, 0 178. Mexicana, 24, 27, O 175, O 190, 0 233, 0 239, 0 241, 0 252, O 318, P 199, P 200, P 201, P 210, P 546. militaris, P 300. mitrula, P 297. monticola, O 173, O 198, V 221. monticolor, O 173, O 198, V 221. navicula, O 252, O 291, P 210. nivea, P 297, R 3. Nuttalliana, 49, O 173, O 291, P 208. opea, P 206. Oregona, O 174, O 199, O 291, P 209, Q 223, V 222. pallida, 72. patina, O 215, O 219, O 223. pecten, 3. pediculus, 108, O 224, O 252, 0 291, O 318, P 200, P 201, P 535. pelta, O 219, O 223. perforata, P 215. persona, O 215, O 223. personoides, O 215, O 223, P

203.

## Patella

peziza, 10, 0 3, 0 179, P 287, P 290. pileata, O 174, O 199, P 209, V 222. pileolus, 19, O 215, O 223. plicata, 35. plumbea, 29. poculum, O 179. porphyrozonias, P 215. rosea, P 215. scabra, 16, 49, O 199, O 209, O 252, O 291, P 203, V 222. scurra, O 172, O 173, O 215, O 224, V 222. scutellata, O 3, P 287. spectrum, 16, O 199, O 209, O 291, P 209, V 222. stipulata, 48, O 187, O 318. striata, O 187, O 252, P 203, P 208. strigillata, O 173, O 198, V 221. talcosa, 9. tessellata, O 173, O 199, P 207, V 221. textilis, 16, 0 209. toreuma, 48, O 288, O 290, O 291, Q 233. — var. tenuilirata, O 288, Q 233. tramoserica, 3. trochiformis, P 264. trochoides, P 265. umbonata, O 174, O 199, O 291, P 209, V 222. venosa, O 163, O 290. verriculata, O 173, O 291, P 203, P 207, V 221. vespertina, 48, O 290, P 203. vulgata, 37, 198. zebrina, var. P 200. Patelloida depicta, O 206, U 204. punctata, 0 215.



striata, P 203.

```
88
                          INDEX OF SPECIES.
Patula
                                      Pecten
                                          Meekii, 81.
    Cooperi, 157.
    Mazatlanica, 157.
    sportella, 157.
    strigosa, 157.
                                             V 219.
Pecten
    adspersus, O 236, P 538.
                                          Nevadanus, 77.
    (fvar.) mquisulcatus, 22, 26, 78,
      85, 131, 155, 170, 280.
                                             0 352.
    altiplicatus, 81.
    aspersus, 199, O 277
                                          Pabloensis, 80.
    catilliformis, 77.
    caurinus, 73. 85, 131, O 311, O
                                          Pealii, O 218.
      348.
                                          pomatia, 14.
    circularis, 40, 45, 76, 107, O
      250, O 285, O 290, O 352, P
      152.
                                            0 351.
    dentatus, O 233, O 311, O 352.
                                          pyxidatus, 153.
    deserti, 76, 81.
                                          rastellinus, 14.
    Dieffenbachii, 73.
    digitatus, O 207.
    discus, 81.
    excavatus, 14.
    Fabricii, 60, 0 211, 0 218.
    fasciculatus, O 207, O 311.
    floridus, 25, 322, O 207, O 311,
       0 351.
                                             0 185, 0 311.
    hastatus, 14, 18, 22, 81, 92, 131.
    hericeus, 18, 92, 131, O 212,
                                             0 348.
       0 311, 0 348.
    Hindsii, 60, 92.
    inca, 199, O 277, O 311
    intermedia, 80, 107.
                                          tunica, 60, 131.
    irradians, 281.
    Islandicus, 4, 20, 60, 70, 92,
       131, 0 218, 0 223.
    Jeffersonius, 81.
    lætus, 73.
   laqueatus, O 288.
                                             0 290, 0 311.
    latiauritus 22, 45, 60, 131, 0
                                                - var. 22.
       198, O 229, O 233, O 234,
                                          Yessoensis, 70, 74.
      O 311, O 349, O 351, V 219.
                                      Pectunculus
    Madisonius, 77.
    magnificus, O 185, O 311, O
      359.
    magnolia, 81.
```

mesotimeris, 45. monotimeris, 26, 78, 131, 151, 0 198, 0 229, 0 233, 0 234, nodosus, O 233, O 234, O 311, nucleus, var. O 290. paucicostatus, 22, 100, 131, 281. propatulus, 165, O 367. purpuratus, 102, O 233, O 284, rubidus, 4, 20, 92, 131, O 207, 0 218, 0 223, 0 311. senatorius, 40, 73, O 282. sericeus, O 207, O 311. (fvar.) squarrosus, 22, 281. subcrenatus, 153. subnodosus, 24, 27, 197, 151, Townsendi, 18, 0 213, 0 311, Tumbezensis, 199, O 277, O 311. tumidus, 35, 78, 85, O 185, O 187, 0 277, 0 290. varius, O 222, P 532. ventricosus, 14, 24, 27, 40, 45, 54, 78, 85, 107, 131, 151, 152, 170, 199, 280, 281, 0 187, 0 233, 0 234, 0 277, 0 282,

assimilis, 200, O 182, O 229, O 233, O 249, O 277, P 144. bicolor, O 285, O 290, O 310. Californicus, O 192.

## Pectunculus corbis, 4. giganteus, 27, O 208, O 233, 0 285, 0 289, 0 310, 0 352. insequalis, 10, 24, 200, O 178, O 182, O 249, O 285, O 289, O 290, O 310, O 366, P 144. maculatus, 24, 200, 0 208, 0 277, 0 310. multicostatus, O 249, O 310, O 366, P 144. nitens, 165, O 367. parcipictus, 24, O 229, O 310. patulus, 165, 0 367. pectenoides, 24, O 208, O 265, 0 310. pectiniformis, O 249, P 144. septentrionalis, O 219, O 223. tessellatus, O 229. Pedicularia Californica, 119, 149. decussata, 119. elegantissima, 119. Sicula, 119. Pedipes angulatus, O 275, O 316. liratus, 98, 116, 133, 159. Penitella Conradi, 14, 121, O 203. ovoidea, 76. penita, 76, 121. spelsea, 76. tubigera, 15, O 203. Wilsonii, 121, O 194, O 265, ♥ xylophaga, 15, 0 203. Perdicea

nodosa, 48. Periploma

alta, 0 280, 0 301.

excurva, Q 229.

obtusa, 62.

excurvata, O 287, O 301.

argentaria, 80, 124, 0 194, 0 301, 0 351, Q 229, V 211.

Leana, O 231, O 297, O 301, Q 229.

Periploma papyracea, O 287, O 301, Q planiuscula, O 194, O 231, O 301, 0 352, ♥ 211. Perna anomioides, 52. Californica, 52, O 193, O 198, 0 234, V 219. Chemnitziana, O 233, O 277, P 150. costellata, 52, O 198, P 152, V 219. flexuosa, O 208, O 233, O 249, P 150. incisa, V 219. maxillata, 82. montana, 82. quadrata, 60. radiata, P 150. Peronæoderma ochracea, 104, 210. punicea, 202. Peronæus artemisia, 158. Persicula clandestina, P 462. frumentum, III. imbricata, 24, 111, 112. interrupta, III. phrygia, 111, 112. minor, P 461. sagittata, III. Persona constricta, 24, O 231. ridens, 24, O 338. Petaloconchus cereus, W 316, W 317. cochlidium, W 314, W 315, W 317. flavescens, W 314, W 317. macrophragma, 24, 43, 108, 114, 140, 239, 0 200, 0 255, 0 323, O 351, O 353, O 364, P 306, P 309, V 226, W 313, W 314, W 317.

```
Petaloconchus
       nerinmoides, W 316, W 317,
         X 428, X 431.
      octosectus, W 317.
      renisectus, W 315, W 317.
      !---, var. Woodwardii, W
        316.
      varians, O 364, W 315, W 316,
        W 317.
 Petricola
     amygdalina, O 184, O 299, O
     arcuata, 12, 14, 45, 120, 127,
       O 196, O 203, O 229, V 214.
          - var. 0 203.
    bulbosa, O 226, O 232, O 244,
      P 547, U 198.
    Californica, 12, 45, 120, 127,
      0 196, 0 229, 0 299, 0 349,
      0 351, V 214.
    carditoides, 12, 14, 20, 22, 26,
     76, 78, 88, 120, 127, 0 196,
     O 229, O 284, V 214.
   cognata, 38, 203, O 279, O 299,
     0 363.
   Cordieri, O 196, O 203, O 229,
     V 214.
  cylindracea, 12, 14, 20, 78, 120,
    127, 0 196, 0 203, 0 219,
    O 224, O 229, O 284, V 214.
  dactylus, O 232, O 299, O 352.
  denticulata, O 244, O 297.
 gibba, 20, 127, O 196, O 219,
    0 223, 0 299.
 lamellifera, var. O 229.
 mirabilis, O 281.
 pholadiformis, O 279.
      - var. 23, 38, 203, O 299,
   0 363.
robusta, 15, 29, 106, O 184,
  0 226, 0 232, 0 234, 0 244,
  0 265, 0 295, 0 299, 0 352,
  O 364, O 365, P 17, P 547,
  U 198, V 209.
rubra, P 108.
```

```
Petricola
         sinuosa, O 226, O 244, 0 35
            P 547, V 209.
         subglobosa, 45.
         suborbicularis, P 105.
         tenuis, 38, 203.
         ventricosa, 154, O 244, O 299, ?
           19.
    Phasianella
        compta, 54, 79, 97, 137, 225,
          282, 0 230, 0 253, 0 283, 0
          284, O 320, O 351, P 225, V
          204.
        (?-
               - var.) elatior, 23, 137,
         282,
       (?- var.) pulloides, 23,
         137, 282,
       (?- var. punetulata, 23,
         137, 281,
      fasciata, P 226.
      fulminata, P 226.
      minuta, P 224.
      perforata, 24, 54, 155, 0 253,
        O 295, O 320, O 364, U 204.
     ?---, var. striulata, O 253,
       P 225.
     pullus, 282, P 226.
     striulata, 214.
     tessellata, P 224.
    undatella, P 226.
    zebrina, P 225.
Phidiana
    iodinea, 94, 95.
Pholadidea
   clausa, O 366.
   concamerata, 123.
   cornea, 121.
   curta, O 244, O 299, P 9.
  melanura, 121, O 194, O 244,
    O 265, O 299, O 366, V 209.
  ovoidea, 14, 22, 26, 123, 0 226,
```

O 299, O 351, U 198.

O 299, O 349, O 351. tubifera, 205, O 299.

Penita, 22, 50, 87, 123, 251,

```
Pholadopsis
:ola
            pectinata, 121, O 265, V 209.
                                                   gaudens, 25, O 206, O 342.
inital "2
                                                   senticosus, O 206.
        Pholas
P30.5
                                                   turritus, O 186, O 343.
            acuminata, O 184.
1.04.
                                                   Veraguensis, O 206, O 342.
            Californica, 121, O 194, O 202,
at..t.
               O 231, O 234, V 209.
                                               Phrontis
13. 3. 7
            Californiensis, O 174.
                                                   xanthostoma, P 495.
meal ...
                                               Phylliroe
            calva, O 184.
                                                   Lichtensteinii, O 173.
            Candeana, 121.
illa
                                               Phyllonotus
            concamerata, 87, 121, O 194,
4 ju 1
               O 202, O 211, O 228, V 210.
                                                   bicolor, 28, 112, 153, O 264,
9:3
                                                      O 345, P 524.
            cornea, O 184, O 229.
0 22
                                                   brassica, 28, 155, O 264, O 345,
            crucifera, O 280.
            crucigera, 23, 205, O 184, O 280,
                                                      P 523.
44.5
                                                    imperialis, 0 345.
               0 299.
                                                   nigritus, 28, 152, 153, 182, O 264,
            curta, 0 184, 0 191.
...
                                                      O 345, P 521.
            dactylus, 205.
Ŀ
                                                    nitidus, O 264, O 345, P 523.
            Darwinii, 251.
15. 5
            Janellii, 121, O 194, O 202, V 209.
                                                    oxyacanthus, O 345.
                                                    princeps, 28, 112, O 264, O 345,
            lanceolata, 23, O 280.
....
                                                      P 525.
            laqueata, 39, 0 280.
Fi.
                                                    radix, 182, O 345
            var. nana, 0 184.
***
                                                    regius, 182, O 264, O 345, P 524,
            oblongata, 121.
4 -
            ovoides, O 226, O 231, O 234,
                                                      P 525.
: .
                                               Physa
               U 198.
...
            penita, 87, 121, O 194, O 202,
                                                    ampullacea, 160.
                                                    aurantia, 27, O 237, O 251, O 316,
               O 211, O 231, V 210.
                                                      0 364.
            retifera, 121.
            rostratra, 15, 0 203.
                                                    aurea, 160.
                                                    bullata, 85, 160, O 283, O 316.
             truncata, 121.
             tubifera, 205, O 280.
                                                    Charpentieri, 160.
            xylophaga, 205, O 280, O 299.
                                                    concolor, 161.
                                                    costata, 118, 160.
        Phorous
                                                    cylindrica, 160.
             Californicus, O 253, O 286, P 235.
                                                    elata, 27, O 227, O 296, O 316,
             euryomphalus, 139.
                                                      O 364, P 180, U 203, V 220.
             liratus, P 235.
                                                    elliptica, 160.
             maculosus, 139.
                                                    elongata, 85, 161.
             marcidus, 139.
                                                    elongatina, 161.
             Panamensis, 0 295.
                                                    fontinalis, O 222.
             pulligo, 19, 21, 139.
                                                    fontana, 160.
             umbilicaris, P 235.
                                                    Gabbii, 160.
             variegatus, O 253, P 234.
                                                    glabra, 160.
         Phos
                                                    gyrina, 160.
             articulatus, O 206, O 343.
                                                    heterostrophs, 85, 93, 116, 120,
             biplicatus, O 284, O 343, S 166.
                                                       160,
             crassus, O 206, O 268, O 343.
```

```
92
                          INDEX OF SPECIES.
Physa
                                      Pirena
     Hildrethiana, 160.
     humerosa, 79, 90, 160, O 283,
                                             U 206, V 226.
                                      Pisania
       0 316.
    hypnorum, 116, O 222.
     inflata, 160.
     Lordi, 90, 93, 160.
    Maugeræ, 61, 162, O 364.
                                          D'Orbignyi, 180.
    osculans 160, O 265.
                                          elata, 105, 221.
    Peruviana, O 237, O 251, P 179,
                                          elegans, O 288.
       P 180, P 540.
    Phillipii, 160.
    planorbula, 161.
    plicata, 160.
                                            P 515.
    purpurostoma, 44.
    Sowerbyana, 44.
    striata, 160.
    subarata, 160.
                                            P 516.
    triticea, 120, 161.
    virgata, 160, O 283, O 316.
                                          mutabilis, P 514.
    virginea, 160, O 209, O 213,
       0 316.
Pila
    multijugis, P 255.
    ornata, P 255.
                                          pastinaca, O 344.
                                          pusio, O 226.
    scabricosta, P 255.
Pileopsis
    antiquata, P 297.
    mitrula, O 255, P 297, R 3.
    pilosa, O 275.
    subrufa, R 4.
Pilidium
                                         tineta, 363.
    commodum, O 216, O 220,
                                     Pisidium
      0 233.
Pinna
                                         abditum, 165.
                                         amplum, 165.
    lanceolata, 107, O 208, O 249,
                                         Kurtzii, 165.
      O 311, P 147.
                                         notatum, 165.
    maura, 24, 38, 107, 199, O 185,
      O 249, O 277, O 311, P 146.
                                         obliquum, O 222.
    nigra, 43.
                                         obscurum, 165.
    rudis O 241, O 282, O 296.
                                         occidentale, 118, 165.
    rugosa, 27, 107, O 185, O 249,
                                         plenum, 165.
      O 311, P 147.
                                         regulare, 165.
    tuberculosa, 24, 38, 199, O 185,
                                         resartum, 165.
      0 277.
                                         retusum, 165.
```

```
Californica, O 200, O 209, O 230,
mquilirata, O 263, O 344.
articulata, O 226.
cinis, 0 344, 0 361.
fortis, 25, 322, 324.
gemmata, 25, 29, 196, O 204,
  0 236, 0 263, 0 344, 0 364,
hæmastoma, O 231.
insignis, 25, 28, 179, 324, 325,
  O 204, O 263, P 514, P 515,
lugubris, 112, O 344.
nigrocostata, O 344.
pagodus, 25, 179, O 344, P 552.
(!---- var.) sequilirata, P 515.
Panamensis, O 344.
ringens, 25, 179, O 263, O 283,
  O 296, O 344, O 363, P 518.
sanguinolenta, 25, 28, 112, 155,
  179, O 177, O 204, O 263,
  O 344, P 517, P 518.
Stimpsoniana, O 344.
```

Pisidium zonatum, 165. Placiphora, vide Plaxiphora. Placiphorella, vide Mopalia. Placunanomia ) Placunomia alope, 11, 132, O 192, O 286, 0 312, 0 348. Broderipii, 0 286. cepio, 11, 92, 132, O 192, O 286, 0 312, 0 348. claviculata, O 250, O 312, P 166. Cumingii, 47, O 180, O 312. echinata, 50, O 250, P 166. foliacea, O 363. foliata, 50, O 250, O 282, O 312, P 166, P 167. macroschisma, 11, 26, 50, 72, 76, 85, 92, 132, 169, 0 203, 0 218, 0 223, 0 234, 0 286, 0 312, 0 347. patelliformis, O 218, O 223, 0 312. pectinata, O 250, P 166. pernoides, O 161, O 250, O 312, 0 365, P 164. Planaxia acutus, O 237, O 240, O 257, P 364, P 541. canaliculatus, O 268. laticostatus, O 178. nigritella, 24, 100, 109, O 164, 0 237, 0 240, 0 257, 0 328, P 364. var., O 237. obsoletus, O 237, O 240, O 257, P 364, P 541. planicostatus, 10, 24, 109, 178, 328, 0 174, 0 230, 0 235, 0 268, 0 360. sulcatus, O 230. Planorbis affinis, O 364, P 181. albus, O 222.

ammon, 40, 79, 120, 161, O 283,

0 316.

**Planorbis** carinatus, P 252. complanatus, O 222. contortus, O 222. corneus, O 222. corpulentus, 18, 44, 85, 93, 161, 0 210, 0 316. deflectus, O 211. Duenasianus, 44. exacutus, O 211. var. fallax, 161. gracilentus, 40, O 283, O 316. Haldemanni, 40. lentus, 161. leucostoma, O 222. Liebmanni, 40. macrostoma, 161. megastoma, 161. Newberryi, 120. opercularis, 85, 161, O 209, 0 211, 0 316. Panamensis, O 186, O 316. parvus, 116. planulatus, 85, 161. regularis, 161. subcrenatus, 93, 161, O 198, 0 316, V 220. tenagophilus, 161, O 237, O 251, P 181, P 540. Traskei, 40, 120, 161. trivolvis, 85, 116, 120, 161, V 221. tumens, 44, 161, O 237, O 251, O 316, O 364, P 181. tumidus, 44. vermicularis, 161, O 209, O 211, 0 316. vermiculatus, O 213. vortex, 0 222. Wyldi, 44. Platyodon cancellatus, 11, 26, 87, 123, 0 194, 0 231, 0 234, 0 300, O 349, O 351, V 210. Platysemus

Wossnessenskii, 92.



Pleurotoma

94 Plaxiphora ) Placiphora 5 retusa, 0 318. Plectodon scaber, 97, 124. Pleuropus pellucidus, O 173. Pleurophyllidia Californica, 94, 133. lineata, 94. Pleurotoma arcuata, O 207, O 208. aterrima, 183, O 183, O 271, P 393. - var. Melchersi, O 271. atrior, 36, 183, O 258, O 271, P 393, P 394. bicanalifera, 183, O 183, O 271. bicolor, O 183. bituberculifera, O 330. Botts, O 191, O 238, O 258, 0 271, 0 294, P 392. cedo-nulli, O 185, O 330. cincta, O 187, O 258, O 272, P 295. clavulus, O 183, O 330. collaris, 183, O 271. concinna, 183, O 271, S 162. cornuta, O 271. corrugata 183, O 183, O 271. discors, 36, 183, O 258, O 271, P 393, P 394. duplicata, 184, O 183, O 271. excentrica, 184, O 183, O 271, P 393. exigua, 184, O 271. funiculata, 24, 27, 109, 184, O 208, O 226, O 238, O 258, 0 271, 0 282, 0 294, 0 330, P 390, P 391, P 544. gemmata, O 205, O 330. gemmulosa, 184, O 271. gracillima, O 284, O 330, S 163, 8 164. grandimaculata, 184, O 271. granulosa, O 183.

hexagona, O 183. incrassata, 184, O 183, O 238, O 271, O 294, P 392, P 544. inermis, O 205. luctuosa, P 397. maculata, P 391. maculosa, 27, O 235, O 238, 0 258, O 330, P 391. maura, O 191, O 258, O 294, P 293. militaris, O 208. Melchersi, O 238, O 294, P 393, P 544. modesta, O 187. nigerrima, 184, O 183, O 271. nitida, O 183. nobilis, O 205. obeliscus, 184, O 271. Ocoyana, 77. olivacea, 184, O 208, O 271, O 330, P 390. - var., O 258, P 390. oxytropis, Q 183, O 330. pallida, 184, 0 271. picta, O 207, O 208, O 330. pudica, O 330. rava, P 399. rigida, 184, O 271. rudis, 184, O 272, P 393. rugifera, O 183. rustica, 36, 184, O 272, P 393. Schantarica, O 217, O 220, O 223. simplex, O 217, O 220, O 223. splendidula, O 183. striosa, 184, O 272. stromboides, O 208. thiarella, O 272. transmontana, 77. triticea, 59. tuberculifera, 6, O 176, O 330. turricula, O 271. unicolor, O 183. unimaculata, O 183, O 330. variculosa, O 183. Plicatula .

dubia, var., O 250, P 155.

```
Plicatula
                                      Poronia
    penicillata, 38, 107, 199, O 250,
                                          Petitiana, 30, P 549.
      O 312, P 155.
                                          rubra, 69, P 108.
Polinices
                                      Potamis
    bifasciata, 27, 110, 152, 153.
                                      Potamides !
                                          Californianus, O 213.
    var. fusca, 9, 110.
    Gallapagosa, O 282, O 284.
                                          ebeninus, 48.
    intemerata, O 337.
                                          fuscatus, U 206.
                                          Hegewischii, O 233, O 295, P 345.
    lactea, O 364.
    otis, 24, 27, 110, O 282.
                                          Montagnei, O 238, P 542.
    ovum, O 284.
                                          pullatus, 79, 84, O 283, O 284.
    Panamensis, O 337.
                                          sacratus, O 209, U 206, V 226.
    perspicua, 102, O 337.
                                      Potamomya
    Recluziana, 27, 153.
                                          sequalis, 204, O 280, O 300.
    Salangonensis, 27, 193, O 337.
                                          inflata, 204, O 280, O 300.
    uber, 24, 37, 110, 193, 0 261,
                                          trigonalis, 204, O 280, O 300.
      O 282, O 337, O 364, P 452.
                                      Priene
    unimaculata, O 337.
                                          cancellata, 20, 170.
    virginea, O 337.
                                          nodosa, 24, 27, 152, 166.
Pollia
                                          Oregonensis, 20, 25, 69, 92, 99,
    distorta, O 268.
                                             147, 169 170, 322.
    hæmastoma, O 177, O 191, O 236,
                                      Pristes
      O 263, O 269, P 517.
                                          oblongus, 97, 127.
    insignis, 29.
                                      Propilidium
    scabra, 20.
                                          ancyloide, 19.
Polydonta
                                      Psammobia
    dentata, O 321.
                                          Californica, 119.
Polygyra
                                          casta, 23, 38, 202.
                                          decora, 124, O 195, O 207, O 231,
    acutedentata, 157.
                                             V 212.
    contortuplicata, O 294.
    polygyrella, 157.
                                          fusca, O 221.
    ventrosula, 157.
                                          Kindermanni, O 301.
Polyplex
                                          maxima, 49.
    gracilis, 6.
                                          olivacea, 74.
Polytropa
                                          Pacifica, 12, 38, 78, 126, O 195,
    nux, P 484.
                                            O 301, O 351, V 212.
Pomatiopsis
                                          regularis, 104, 210.
    Binneyi, 163.
                                          ruhroradiata, 26, 49, 88, 124.
Pomaulax
                                      Psephis
    undosus, 23, 27, 37, 53, 108, 137,
                                          Lordi, 88, 97, 127.
       151, 192, 0 199, 0 234, 0 240,
                                          salmones, 25, 97, 127.
                                          tantilla, 22, 25, 118, 126, 165.
       O 282, O 283, O 320, P 230,
       V 224.
                                          tellimyalis, 127, 303.
Pompholyx
                                      Pseudo buccinum
     effusa, 120, 160.
                                          biliratum, 0 342.
```

#### Pseudobuccinum

Panamense, O 342. pulchrum, O 342.

#### Pseudoliva

Kellettii, 40, O 272, O 340, O 350.

#### Pteroceras

lambis, 109.

#### Pteronotus

centrifugus, 102, O 345. festivus, 23, 149, O 345.

#### Pullastra

gigantea, O 196.

#### Puncturella

Cooperi, 98, 137. cucullata, 80, 98, 137, O 209, O 320, O 348. galeata, 137, O 320, O 348. noachina, 72.

#### Pupa

Californica, 118, 158. chordata, 158. ovata, 117. Rowelli, 117, 158.

#### Pupilla

Californica, 458. Rowelli, 158.

### Purpura

alveolata, O 187, O 293, O 340. analoga, 20, 28, 148, O 240. angulifera, 10, O 191, O 269. aperta, 13, 325, O 201, ♥ 227. atromarginata, O 236, P 537. attenuata, 20, 148, O 220. bezoar, O 294. bicostalis, O 174, O 190, O 191, 0 236, 0 238, 0 262, 0 292, P 477, P 478, P 537, P 543. biserialis, 14, 24, 28, 111, 151, 152, 180, O 171, O 187, O 190, 0 191, 0 202, 0 204, 0 231, 0 234, 0 235, 0 236, 0 238, 0 262, 0 269, 0 283, 0 340, O 352, O 364, O 366, P 477, P 482.

#### Purpura

biserialis var., O 283. bizonalis, O 217. brevidens, V 229. bufonides, 14. callosa, 10, 48, O 269, O 294. canaliculata, 10, 20, 28, 92, 148, 0 171. cancellata, O 236. Carolensis, 180, O 187, O 240, 0 241, 0 262, 0 269, 0 340, O 361, P 480. cassidiformis, P 476. centiquadra, 10, O 171, O 191, O 262, P 480. chocolata, O 191, O 294. columellaris, 6, O 174, O 178, 0 187, 0 191, 0 228, 0 231, 0 235, 0 240, 0 262, 0 294, O 340, O 361, P 355, P 475, 0 481. Conradi, 83, O 184, O 192, O 201, O 203, O 231, V 228. consul, O 238, O 262, P 477, P 478, P 542. cornigera, 10, 0 177, 0 191, 0 201, 0 269, V 229. coronata, O 297. oostata, O 191, P 482. costularis, O 191. crassilabrum, O 171, O 235. crispata, 7, 13, 23, 26, 74, 92, 148, 0 192. decemeostata, 4, 10, 20, 28, 83, 92, 149, O 217, O 223, O 240, 0 340. deltoidea, O 364, P 478. diadema, O 262, P 482. dumosa, O 201. emarginata, 13, 27, 83, 148, 0 201, 0 203, 0 212, 0 213, O 231, O 234, O 235, O 283, 0 340, 0 351, 0 352, V 228. engonata, O 293, V 228, V 229. fasciata, O 183. ferruginea, 83.

Purpura Floridana, O 190, O 262, O 364, P 477. foliata, 4, 5. foveolata, 35, 180, O 269. Freycinetii, 14, 20, 28, 72, 83, 0 203, 0 204, 0 217, 0 220, 0 223, 0 240, 0 340. fuscata, 13, 28, 114, 148. fusiformis, O 191. Grayi, O 188, O 204, O 294. hæmastoma, O 190, O 202, O 231, 0 236, 0 262, 0 366, P 477, P 478, P 537. hematura, O 204, O 262, P 477. harpa, 13, O 201, O 340, O 349, V 228. imbricata, 102, O 217. kiosquiformis, 180, O 191, O 231, 0 234, 0 235, 0 269, 0 352, P 481. - var., O 269. lactuca, 4, 83, 148. lagena, 18, 0 212, 0 340, 0 348. lamellosa, 5, 0 340. Lapillus, 13, 18, 23, 83, 148, 0 203, 0 204, 0 217, 0 220, 0 223, 0 231, 0 340. lapilloides, O 293. Inacrostoma, O 201, O 340, O 349, ₹ 227. naculata, 0 269. madreporarum, 63. nelo, 24, 180, O 269, O 340. Enelones, 10, 0 231, 0 269, 0 282, 0 340. muricata, 28, 108, 111, 0 235, O 262, O 340, O 352, P 476. mux, P 484. mympha, 0 191. Ocellata, 10, 0 269. Ochrostoma, 63. Osculans, 35, 180, O 269. Ostrina, 13, 14, 18, 26, 27, 83, 148, 151, 152, O 210, O 340, O 348,

7

Purpura pallidus, 191. pansa, O 228, O 262, O 340, O 362, O 363, O 365, P 474, P 475, U 208. patula, 6, 8, 24, 28, 48, 63, 111, 152, 166, O 171, O 228, O 234, 0 238, 0 262, 0 283, 0 292, 0 340, 0 352, 0 361, 0 363, O 365, P 474, P 475, P 476, P 479, P 542, U 208. planospira, 6, 8, 28, 103, 104, 108, 111, O 187, O 240, O 340, 0 361. planospirata, 48. plicata, 148. purpuroides, 180. rupestris, 14. sanguinolenta, O 191, O 231, P 517. saxicola, 13, 18, 23, 83, 148, 0 204, 0 220, 0 231, 0 340. – var., 83. scalariformis, O 190, O 262, O 269, P 481. semi-imbricata, 7, O 171. septentrionalis, 74, 83, 148, O 211, 0 212, 0 217, 0 231, 0 340. speciosa, O 171, O 191, O 262, O 340, P 480. sphæridia, 10. spicata, O 293, V 228. spirata, O 191, O 201, V 228. succincta, 10. tecta, 180, O 269. triangularis, 24, 28, 111, 180, 0 187, 0 191, 0 262, 0 269, 0 340, 0 361, P 480. triserialis, 24, 111, O 171, O 191, O 262, O 283, O 294, O 340, P 479, P 480. truncata, O 191, O 262, P 476. undata, 180, O 171, O 187, O 190, 0 202, 0 262, 0 269, O 340, O 364, P 477, P 478.

98 Pustularia pustulata, P 375. Pyramidella bicolor, O 296. conica, 193, O 274, P 409. Pyrasus incisus, 108, 112, 152. -var., 152. Pyrgula quadricostata, O 284, O 326, 8 162. Pyrgulina clathratula, 33, P 424. convexa, 33, P 424. Photis, 33, P 425. Pyrula anomala, O 238, O 263, P 503, P 544. Belcheri, O 205. bezoar, O 191. carnaria, O 171. lactea, O 263, P 503. lignaria, O 234, O 263, P 502. melongena, O 294, O 364, P 501. — var., O 263, P 501. patula, 25, 28, 153, O 171, O 176, O 234, O 238, O 263, 0 271, 0 294, 0 343, 0 364, P 500, P 544. rapa, 7. reticulata, O 171. spirata, 7, O 171. subrostrata, O 176, O 238, O 293, P 544. turbinelloides, O 263. ventricosa, O 174, O 236, O 294, P 453. vespertilio, O 171. Pythina rugifera, 88, 129. sublævis, O 248, O 308, P 112. Radius æqualis, O 328. avena, 24, 154, O 328. Californicus, O 328.

# Radius emarginatus, O 328. inflexus, O 328. similis, 24. Raeta canaliculata, 100, 126, 167, 204. undulata, 21, 100, 126, 167. Ranella albofasciata, O 163, O 185 O 338. anceps, O 238, O 294, O 338, P 544. argus, O 294. bufonia, O 294. celata, 24, 110, 182, O 231, O 270, 0 294, 0 338. Californica, 15, 27, 110, 147, 170, 0 205, 0 338, 0 351. convoluta, O 231, O 338. crumena, O 171. crumenoides, O 171. granifera, O 172. muriciformis, O 182, O 201, O 238, O 283, O 338, O 351, P 544. nana, O 163, O 176, O 185, O 208, O 238, O 271, O 338, P nitida, 24, 182, O 231, O 271, O 338. pectinata, O 338. plicata, O 271, O 338. pyramidalis, 24, O 182, O 238, 0 294. scabra, O 294. semigranosa, O 270, O 294. triqueta, 13, 24, 34, 102, 153, 0 201, 0 285, 0 338, 0 351, V 227. tuberculata, O 338. - var., O 297. ventricosa, 15, 147, 170, O 235.

vexillum, O 294, O 297.

trigona, O 232, O 246, P 52.

Rangia

Rapana

nux, 0 262.

Recluzia	Rissoa
Rollaudiana, 62, O 297, O 316.	glabra, O 220.
Rhinoclavis	inconspicua, 32, 33, 36, 189, 190,
gemmata, 7, 24, 108, 152, 185.	O 273.
Rhisochilus	infrequens, 189, O 273, O 327.
asper, O 287, O 297, O 340.	Janus, 189, O 273, O 327.
Californicus, 35, 111, 180, O	lirata, P 358.
262, O 287, P 484.	notabilis, 33, 36, 189, 190, O
distans, 34, 35, 180, P 484.	273, 0 327.
foveolatus, O 340.	proxima, P 437.
gibbosus, P 485.	saxatilis, O 220.
madreporarum, 155.	scalariformis, 36, 189, O 273, O
niveus, P 484.	327.
nux, 25, 34, 35, 111, 180, O 262,	striata, O 238, P 356, P 542.
O 269, O 340, P 484.	Rissoina
Rhodea	ambigua, 230.
Californica, 158.	Catesbyana, O 364.
Rhynchonella	Clandestina, 109, O 327.
lucida, 72.	expansa, 24, 293.
psittacea, 71, 93, 122, 168.	infrequens, 109, 293.
Ricinula	interfossa, 99, 142.
alveolata, O 187, O 293.	firmata, 24, 32, 109, 189, O 327.
arachnoidea, O 176.	fortis, 24, 109, O 327.
carbonaria, 181, O 231, O 270.	Janus, 24.
contracta, O 187.	pyramidata, P 356.
elegans, O 176.	scalariformis, 32.
heptagonalis, O 187.	striata, 24, 109, O 257, O 327,
jugosa, 181, O 270.	P 356.
Reeviana, 181, O 270.	Woodwardii, 24, 189, O 257,
zonata, O 187.	O 327, O 364, P 356, P 357.
Rimula	Rocellaria
cucullata, O 209, O 213.	ovata, 12I.
galeata, O 209.	Rostellaria
Mazatlanica, 108, O 252, O 320,	indurata, O 367.
P 222.	Rotella
Rissoa	lineata, O 222.
acutelirata, 99, 142.	Rupellaria
albolirata, 104, 216.	Cordieri, 127.
arctica, O 220.	exarata, O 244, O 299, P 20.
bryerea, P 357. clandestina, 189, O 273, P	foliacea, 154, O 299.
clandestina, 189, O 273, P	lamellifera, 22, 25, 26, 127, O
compacta, 89, 142.	299, 0 349, V 214.
firmata, 361, 89, O 273, P 357.	lingua-felis, 106, O 244, O 299, P 20.
fortis, O 273, P 356.	
-witte, 0 2/3, E 330.	paupercula, O 299.
•	•

Sanguinolaria Californica, O 221. Californiana, 12, 62, 86, 125, O 301, V 212. decora, 70, 0 226. fusca, 62, 0 221. grandis, O 228, O 349. miniata, 23, 27, 29, 35, 49, 154, 0 231, 0 245, 0 301, P 548, U 199. Nuttallii, 26, 70, 124, 151, 169, 0 195, 0 207, 0 226, 0 234, 0 301, 0 351, 0 352. ovalis, 49. Pacifica, V 212. purpurea, 49, 0 226, 0 231, 0 245, 0 301, 0 352, P 31, P 548, U 199. rubroradiata, 12, O 301, V 212. tellinoides, 49, 0 286, 0 301 P 31. Saxicava abrupta, 76. arctica, 118, 123, 0 244, 0 296, O 299, O 365, O 366, P 16, P 24. Californica, 120, O 196, ▼ 214. carditoides, 120, O 196, O 232, O 234, V 214. clava, 15, 0 203. Cordieri, O 232, P 16. distorta, 70, 0 221. fragilis, 256. Gallicana, O 221. Grænlandica, O 221. lamellifera, O 234. legumen, 14, 15, 123, O 202, 0 203. pholadis, 14, 15, 22, 26, 70, 88, 91, 105, 123, 124, 151, 166, 168, 0 202, 0 219, 0 221, 0 223, 0 232, 0 279, 0 299, 0 351. rugosa, 70, 91, O 221, P 15,

P 16.

solida, P 16.

tenuis, 38, 203, O 279, O 299. Saxidomus aratus, 12, 73, 86, 127. brevisiphonatus, 93, 127, 251. giganteus, 12, O 196, O 299, V 215. Nuttallii, 12, 74, 76, 86, 127, 0 192, 0 196, 0 203, 0 210, 0 232, 0 234, 0 299, 0 349, O 351, V 215. Petitii, 12, 17, 0 196, 0 299, 0 squalidus, 12, 14, 20, 22, 86, 91, 127, 0 192. Scalaria aciculina, O 207, O 336. australis, 18, 114, O 210, O 336. bellastriata, 99, 146. borealis, O 212. crassilabris, O 238, P 542. crebicostata, 99, 146. Cumingii, 99, 146, O 284, O 336, 8 165. diadema, 33, O 181, P 448. Dianæ, O 206, O 336. Elenensis, 33. funiculata, 33, O 260. gracilis, 146. Grænlandica, 71, O 216, O 223, 0 336. hexagona, 192, O 260, O 274, O 285, O 336, P 446. Hindsii, 24, O 284, O 336, S 165. Indianorum, 114, 146, 169, 244. - var. 99. indistincts, O 285, O 288, O 336. Mindorensis, S 164. mitræformis, O 186, O 336, P 446, Q 235, S 165. obesa, 8 164. obtusa, 192, O 274, O 336.

Ochotensis, 20, O 216, O 220,

0 223.

planicosta, O 216.

Scalaria raricostata, 33, O 260, O 336, P 447. regularis, 244, 0 284, 0 336, 8 164. reflexa, O 288, O 336, Q 235. statuminata, O 230, O 336. subcoronata, 99, 146. subnodosa, O 284, O 336, S 165. subulata, O 216. suprastriata, O 260, O 336, P 446, P 447. tiara, 110, O 284, O 336, S 164. frar. tincta, 146, 151, 244. Turtonis, 244. venosa, O 230. vulpina, O 206, O 336. Scapharca bifrons, 24, 154. emarginata, 24. labiata, 24. nux, 24. Schizopyga Californiana, 79. Schizothærus Nuttallii, 22, 25, 26, 69, 72, 76, 86, 123, 126, 169. maximus, 123. Scintilla Cumingii, O 186. Scissurella rimuloides, 34, 258. **Bcrobicularia** alta, 26. angulata, Q 230. biangularis, O 303. biangulata, 12, O 195, Q 230, V 213. Dombeyi, var. 272. producta, 40, 272, O 284, O 287, 0 303, Q 230, S 160. viridotineta, O 284, O 303, S 160. Scutalus proteus, 158. Xantusi, 158.

Scutellina navicelloides, 31, 37, 197, O 252, 0 319, P 211. Scurria (fvar.) funiculata, 98, 136. mitra, 23, 26, 79, 84, 136, 170, 0 173, 0 174, 0 190, 0 199, 0 202, 0 209, 0 234, 0 297, O 319, O 348, P 292, V 222. pallida, 79, 0 284. scurra, 170, V 222. **Begmentina** Donbilli, 44. Seila assimilata, 33, P 445. Semele bicolor, 29, 105, O 303. Californica, O 287. – var. 105, 151, O 303. corrugata, 126. decisa, 22, 26, 126, O 231, O 303, O 351, V 213. elliptica, O 303, P 28. flavescens, 29, 39, 48, 105, 203, O 245, O 303, O 351, P 28, P 548, U 199. flavicans, 48, O 231, O 279. incongrua, 97, 126. obliqua, O 284, O 303. planata, O 284, O 303, S 160. proxima, 39, 154, 203, O 226, O 231, O 245, O 279, O 303, P 548, U 199. pulchra, 23, 39, 78, 97, 126, 154, 203, 0 303. punctata, 0 304, S 160. rubrolineata, 22, 113, 126, O 163, O 232, O 303, O 351, ♥ 212. rubrotincta, O 284, O 352. rupium, 97, 126, 170, O 304, 0 359. simplex, O 163, O 195, O 232,

V 212.

striosa, 203, O 303.

tortuosa, O 303.

### Semele

ventricosa, 203, O 303. venusta, 23, 29, 154, 203, O 245, O 303, P 28.

#### Senectus

funiculatus, 4. squamigerus, 24, 154.

# Septifer

bifurcatus, 26, 129, 151. Cumingianus, 106, 0 309.

# Serpula

incurvata, X 436. recta, X 425, X 436. regularis, 42.

## Serpulorbis

Panamensis, 42. squamigerus, 23, 27, 100, 140.

# Serripes

Grænlandicus, 70, 88, 128, 168. Laperousii, 128.

#### Serrula

Carpenteri, O 287.

# Sigaretus

coriaceus, O 176, O 216. debilis, 27, O 228, O 233, O 337, O 352, U 207. fenestratus, O 259, P 408. inflatus, O 275. millegranus, O 170, P 408. scopulosus, O 367. tessellatus, O 294, P 407.

### Siliqua

lucida, 120, O 195, V 211. Nuttallii, 120, 124, O 195, V 211.

# Siliquaria

gibba, 39.

# Simnia

patula, P 375.

# Sipho

terebalis, 73.

### Siphonalia

anomala, 152. fuscotineta, 23, 149, 288. Kellettii, 74, 149, 169, 289. modificata, 152. pallida, 28, 49, 112.

# 

162, O 251, O 290, O 316, P 184. equilorata, O 290, P 550. amara, 48, 162, O 290. characteristica, 197, O 185, O 276, 0 282, 0 290. costata, O 185, O 276, O 316. denticulata, O 239, P 546. ferruginea, 31. gigantea, O 229. gigas, 24, 152, 197, O 174, O 276, 0 282, 0 290, 0 316, 0 359, T 168, U 205. - var. O 276. lateralis, 133, 170, 238. lecanium, 24, 31, 107, 162, 256, 0 208, 0 225, 0 235, 0 251, O 290, O 316, P 182, P 184, P 535, P 536. 🗕 var. O 239. - var. palmata, O 251, P 183. leviuscula, 152.

276, O 316. palmata, 24, 31, 107, 162.

pentegoniostoma, P 212. pica, 37, 197, O 276, O 285, O 316.

maura, 24, 31, 162, O 185, 0

scutellum, O 203, O 316, O 359. thersites, 47, 113, 133, 162, 170, 237.

Tristensis, 47, 113.

# Siphonium

var. centiquadra, 42.
effusum, 42.
lituella, 42.
margaritarum, 42.
megamastum, 42.
var. spinosum, 44.
suborenatum, 44.

# Sistrum

carbonarium, 25, 111. (!ochrostoma, var.) rufonotatum, 105, 220. Solecurtus '

# Skenea rota, X 415, X 426. Verrauxii, 62. **Smaragdinella** thecaphora, O 250, O 313, P 533. Solariella aspecta, 98. peramabilis, 98, 139. Solarium æthiops, O 294. bicanaliculatum, 7, 0 170. cyclostoma, O 294. granosum, O 170, P 408. granulatum, 15, 24, 27, 36, 58. 110, 153, 191, 0 170, 0 236, O 237, O 274, O 333, P 536, P 541. granulatum, var. 58. granulosum, 15. placentale, 58, O 206, O 333. placentula, 58. quadriceps, 15, 27, 58, 110, 153, 191, 0 206, 0 234, 0 235, 0 **274,** O 333. variegatum, 63, O 294, P 407. verrucosum, 58. Solecardia eburnea, O 265, V 209. Solecurtus affinis, 39, 205, O 245, O 280, O 301, P 27. ambiguus, 48. Californianus, 12, 22, 26, 124, 170, 0 195, 0 231, 0 284, 0 301, 0 351, ♥ 212. Californicus, O 349. Californiensis, 78. Caribbæus, 39, 205. Carpenteri, 29. Dombeyi, 12, 48, 124, 170. lucidus, 12, 120, O 195, O 211, V 211. maximus, 120, 124, V 211. Nuttallii, 12, 87, 120, O 195, O 222, V 211.

politus, 29, O 245, O 301, P 27.

```
radiatus, 120, O 195, O 211, V
    splendens, V 211.
    subteres, 22, 124, O 195, O 231,
      0 234, 0 301, 0 349, 0 351.
    violascens, 151, O 282, O 301,
      P 27.
Solemya
    pusilla, 73.
    valvulus, 104, 210.
    velum, 73.
    ventricosa, 164, O 367.
Solen
    altus, O 175, O 222.
    acutidens, O 175.
    ambiguus, 6, 7, 8, 20.
    Americanus, O 222.
    Californianus, O 61.
    corneus, 73.
    Dombei, 61.
    eusis, O 222.
    gracilis, 73.
    maximus, 9, 87, 0 211, 0 212,
      0 213, 0 222, 0 231.
    medius, 7, 20, 0 222.
    minutus, 0 221.
    Nuttalli, O 231.
    patulus, 5, 9.
    rudis, 6, 39, 205, O 280, O 301.
    sicarius, 26, 74, 87, 124, 169,
      0 209, 0 212, 0 213, 0 301.
           -var.) rossceus, 22, 124,
    (!-
      279.
    splendens, 120, O 195, O 222.
    strictus, 73.
    subteres, 61.
    tenuis, O 175, O 222.
Solena
    ambigua, 39.
    media, 39.
    obliqua, 39, 205.
Soletellina
    obscurata, 70.
Sphænia
    bilirata, 118.
```

```
104
                          INDEX OF SPECIES.
                                     Spondylus
Sphænia
                                         princeps, O 312.
    Binghami, P 16, P 24.
                                               - var. O 182.
    Californica, 78, 87, O 194, O
      211, 0 284, 0 301, 0 349, 0
                                         radula, O 290, O 312.
                                          varians, O 233.
      351, V 210.
    fragilis, 29, 39, 105, O 244, O
                                          Victoria, 41.
                                     Standella
      300, P 24, P 530.
                                          Californica, 22, 99, 113, 126, 151.
    luticola, 29.
                                          falcata, 126.
    ovalis, 168.
                                          fragilis, 27, 106.
    ovoidea, 88, 123.
                                          nasuta, 12, 99, 126.
Sphærella
                                          planulata, 99, 126.
    tumida, 30, 129.
                                          velata, 204.
Sphærium
                                     Stenotrema
    dentatum, 164.
                                          germana, 157.
    lenticula, 165.
                                     Stephopoma
    meridionale, 165.
                                          var. bispinosa, 42.
    nobile, 165.
                                          pennatum, 42.
    occidentale, 116, 165.
                                     Stoa
    ovale, 165.
                                          ammonitiformis, 42.
    patella, 165.
                                          subcrenata, 44.
    Spokani, 91, 165.
                                      Stomatella
    striatinum, 116, 164.
                                          inflata, 37, 194, O 275, O 320.
    subtransversum, 165.
                                      Stramonita
    tumidum, 91, 165.
                                          petrosa, 76.
Spiraxis
                                      Strategus
    Cobanensis, 44.
                                          inermis, 94, 95.
    Lattrei, 44.
                                      Strebloceras
    Shuttleworthii, 44.
                                          anellum, 43.
Spiroglyphus
                                          cornucides, X 441, X 443.
    albidus, 43.
                                          solutum, X 441, X 443.
    lituella, 27, 108, 140.
                                      Strephona
Spisula
                                          incrassata, P 464.
    fragilis, P 51.
                                          Pedroana, 76.
Spondylus
                                      Strigatella
    calcifer, 24, 107, 199, 256, 258,
                                          effusa, O 339.
       0 241, 0 250, 0 277, 0 312,
                                          tristis, 24, 110, 151, 177, 0 261,
       P 547, P 548, P 550.
                                            O 339, P 461.
    crassisquama, O 233.
                                      Strigilla
     dubius, O 182, O 312, P 153.
                                          carnaria, 23, 27, 102, 151, 154,
     ducalis, P 153.
                                            0 195, 0 224, 0 227, 0 228,
     Estrellanus, 81.
                                             0 245, 0 303, 0 350, 0 353,
     Lamarckii, 199, O 250, O 277,
                                             O 363, P 39, P 40, U 200.
       P 153, P 547.
                                          dichotoma, O 224, O 303.
     limbatus, 43, O 290, O 312.
                                          disjuncta, 40, O 284, O 303, S
     pictorum, O 233, O 234, O 265.
                                             160.
           - var. P 153.
```

```
Strigilla
     effusa, 0 361.
     ervilia, O 224, O 303.
     fucata, 29, 38, O 227, O 228, O
       245, O 279, O 363, U 200.
     lenticula, 105, O 224, O 245, O
       303, P 41.
    miniata, O 245, P 40, U 200.
    pisiformis, 23, O 224, O 303, O
    sincera, 23, 40, 105, 203, O
       303, 8 160.
    tristis, O 361.
Strombina
    angularis, O 344.
    bicanalifera, 25, 180, O 344, O
    dorsata, 180, O 344.
    elegans, O 344.
    fusiformis, 0 344.
    gibberula, 25, 112, 151, 180, 0
      344.
    lanceolata, O 344, O 361.
    maculosa, 112, O 263, O 344, P,
      513.
   recurva, 25.
   turrita, 181, 0 344.
Strombus
    bituberculatus, 10.
   cancellatus, 7.
   crenatus, 187, O 258, P 380.
   galea, 43, O 179, O 241, O 258,
      0 270, O 282, P 302, P 381.
   galeatus, 24, 109, O 187, O 238,
     0 270, O 329, P 544.
   gigas, O 364, P 382.
   gracilior, 24, 27, 109, 153, O 174,
     O 179, O 187, O 233, O 235,
     0 238, 0 270, 0 282, 0 329,
     O 352, O 364, P 383, P 544.
   granulatus, 7, 24, 27, 109, O 2,
     0 174, 0 179, 0 187, 0 230,
     0 235, 0 238, 0 258, 0 270,
     0 282, O 329, O 360, P 382,
     P 544.
                                    Syrnola
   lentiginosus, O 238, P 544.
```

```
Strombus
      marmoratus, P 335.
      muricatus, P 335.
      Peruvianus, 10, O 270, O 329,
        O 364, P 382.
     pugilis, O 364.
     vittatus, O 367.
 Stylifer
     astericola, O 281, O 335, O 360.
 Styliferina
     turrita, 99, 143.
 Styloptygma
     clausiliformis, 33, P 126.
 Subula
     luctuosa, 109, O 258, O 329, P
       387.
     strigata, 109, 0 329.
     varicosa, 177, O 329.
Succinea
     aperta, 162.
     aurea, 159.
     brevis, O 296.
     cingulata, 159, O 240, O 315.
     Hawkinsii, 90, 159.
     lineata, 120.
     Nuttalliana, 85, 159.
    Oregonensis, 159, O 198, O 315,
    ovalis, 159.
    putris, 44, 93, O 222.
    rotundata, 162.
    rusticana, 93, 116, 159, O 209,
      0 315.
Surcula
    funiculata, P 390.
Sycotypus
    Ocoyanus, 77.
Syphopatella
    aspersa, O 275.
    conica, P 265.
    lichen, P 266.
    mamillaris, P 266.
    regularis, 195.
    sordida, O 184.
```

lamellata, 33, 110, P 411.

Tapes tumida, 127, O 196, O 306, V Tapes Adamsii, 74, 304. 214. decussata, 74, 127. Tectarius Deshayesli, 58. coronatus, O 170. discors, 23, 78, O 306, P 77. diversa, 12, 56, 72, 76, 86, 127, Tectura persona, 16. 304, 0 203, 0 284, 0 289, 0 textilis, 16. 306. Tecturella florida, U 200. grandis, 31, 47, 136, 310. fluctuosa, 39. Tedinia fuscolineata, 23, 211. pernoides, O 250, O 286, P 165. geographica, U 200, Tegula gracilis, 75, 78, O 227, O 284, elegans, 10. O 306, O 352, U 200. flammea, 61. granulata, 55, O 364, P 76, P pellis-serpentis, 24, 61, 0 170, 78. 0 282, 0 288, 0 321. grata, 23, 27, 38, 55, 58, 78, 151, strigilata, O 282. 201, 0 247, 0 278, 0 282, 0 Teinostoma 306, O 352, P 77. amplectans, O 254, O 322, P ___ var. 56, 151. 253, P 254. histrionica, 27, 38, 201, O 203, minutum, O 273, O 322. 0 247, 0 278, 0 306, 0 352, substriatum, O 254, O 322, P O 364, P 76, P 77, V 215. 254. Inezensis, 81. Tellidora laciniata, 26, 57, 127, 304. Burneti, 14, 29, 226, 0 234, 0 245, O 297, O 303, O 364, P linteata, So. maxima, O 232. 548, montana, Sr. erystallina, 202. mundulus, 127. lunulata, 14. var. orbella, 127. Tellina Petitii, 127. albaria, O 367. ____ var. 70, 74, 76, 91. alta, 12, 125, O 195, O 302, O pectunculoides, O 306. 349, V 213. regularis, 119. alternata, 29, O 245, P 35. alternidentata, 9, O 175, O 221, rigida, 127. var. ruderata, 127. 0 347. squamosa, 106, O 247, O 306, amplectans, 155. angulosa, O 245, P 35. P 78. staminea, 12, 17, 22, 26, 56, arctata, 165, O 367. straminea, 5 76, 78, 86, 91, 127, atra, 0 219. 151, 152, 304, 0 aurora, 202, O 186, O 279, O 306, 0 349, 0 303. 351, O 352, P 76, balthica, 20, O 221. V 215. bimaculata, O 363. tenerrima, 17, 22, 100, 127, 304, bitruncata, O 367. O 227, O 229, O 306, U 200.

#### Tellina

Bodegensis, 69, 86, 125, 169, 0 207, 0 211, 0 219, 0 224, 0 234, 0 302, 0 349. brevirostris, O 245, O 287, O 302, P 38. Broderipii, O 245, O 302, P 32. Burneti, O 175, O 203, P 39, P 83. calcarea, O 221, O 232. Californica, 18, O 211, O 302. earnaria, O 221, O 222, P 39, P 40, U 200. cicercula, O 224, O 236, P 534, P 539. coguata, 38, 202, O 279, O 303, 0 364. Columbiensis, 202, O 279, O 303. concinna, O 279. congesta, 75. crystallina, 202, O 279, O 303. Cumingii, 27, 105, 202, O 186, O 234, O 245, O 279, O 302, P Dariena, 77. decumbens, 271. delicatula, O 245, O 287, O 302, denticulata, O 245, O 302, P 38. Deshayesii, O 284, O 303, S 160. dichotoma, O 224, P 534. Diegoana, 75. divaricata, P 99. Dombeyi, 202, 272, O 186, O 245, O 279, O 302, P 33. donaciformis, P 34. donacilla, O 245, O 302, O 366, P 34, P 531. donacina, O 366, P 34. eburnea, 29, O 245, O 302. edentula, 86, O 175, O 195, O 219, O 223, O 301, V 213. elougata, O 186, O 279, O 302. emacerata, 165, O 367. ervilia, O 224, P 534. fabagella, 73.

#### Tellina

Fabricii, O 221. fausta, O 284, O 303. felix, 23, 38, 73, 202, 203, 0 186, O 228, O 245, O 279, O 302, P 34. frigida, O 221. fucata, O 227, U 200. fusca, 20, 0 221. gemma, 75, O 227, O 232, O 302, O 352, U 200. Greenlandica, O 175. gubernaculum, O 186, O 302. Guilfordize, 9, 0 221. Hanleyi, 105. hiberna, O 186, O 303. inæqualis, 230. inconspioua, 62, 0 175, 0 221, 0 347. inquinata, O 192, O 302. insculpta, O 186, O 302 Japonica, 14. laceridens, 202, O 186, O 279, 0 302. lamellata, O 245, O 302, P 37. laminata, 39. lata, 0 219, 0 221, 0 223, 0 301, lenticula, O 224, P 41, P 534. ligamentina, 14, O 195, V 213. lingua-felis, P 20. lintea, O 193. lubrica, 73. lutea, 9, 0 219, 0 221, 0 223, Mazatlanica, 40, O 302, P 33. miniata, O 226, P 31, P 548, U 199. muricata, 9, P 98. nasuta, 86, 302, O 192, O 211, 0 219, 0 221, 0 223, 0 232, 0 234, 0 283 0 296, 0 347, O 351, O 367, V 213. ochracea, 104, 210. opercularis, 47, 154. operculata, 8, 47, O 245, O 363, P 32.

# Tellina

Panamensis, O 295, O 303. Pedroana, 75. perna, 0 366. petalum, O 170, O 302. pisiformis, 60, O 224, P 102. plebeia, O 186, O 302. princeps, 154, O 186, O 282, O 302. prora, 202, O 279, O 303. proxima, O 178, O 221. puella, 23, 38, 202, O 245, O 279, O 302, P 37. punicea, 8, 23, 154, O 245, O 279, O 302, O 363, P 35. pura, 21, 29, 40, O 227, O 232, O 302, O 351, U 199. purpurea, 29, P 33. regia, O 186, O 232, O 302. regularis, O 245, O 302, P 36. rhodora, O 284, O 303. rosea, 35. rubella, 23. rubescens, 105, 202, O 186, O 282, O 302, P 32. rufescens, 47, O 208, O 246, O 296, O 302, O 363, O 366, P 32. rugosa, 9. siliqua, 202, O 279, O 303. similis, O 364. solidula, 20, O 170, O 219, O 221, 0 223, 0 301. sordida, O 221. straminea, O 245, O 287, O 302, P 34. striat., 155, P 35. suborbicularis, P 105. tersa, 20, 272, O 226, O 228, 0 303, U 199. triangularis, 221. vicina, 12, 38, 78, 126, 203, O 232, 0 279, 0 284, 0 302, 0 351, O 363, U 201. virgo, O 189, O 302. Tellimya bidentalis, 303.

### Tellimya

lactea, P 105. suborbicularis, P 105. tenuis, P 105. tumida, 88, 97, 129. Tellinides purpureus, O 175, P 32. Terebra aciculata, O 185, O 285, P 388, P 389. Africana, 51, 61, O 285, 0 288, P 384. albocineta, 51, O 226, O 258, P vi., P 384, P 386. arguta, O 228, O 233, O 258, P 388, U 206. armillata, 51, O 206, O 239, O 258, O 366, P 384, P 545. aspera, 51, O 185. Belcheri, O 296. castanea, 51. cinerea, 51, 0 364. dislocata, 51. elata, 177, O 185, O 267. elongata, 51. flammea, 41, 51, 61, O 207. formosa, 41. frigata, O 189. fulgurata, O 225, O 228, O 233, O 236, O 352, P 535, P 537, P 552. Hindsii, 51, 0 258. Hupei, 51. incomparabilis, 41. insignis, 41. interstincta, 0 366. intertincta, 51, P 384. Jamaicensis, 51. larvæformis, 41, 177, O 267. laurina, 51. lingualis, 109, O 206, O 330.

Loroisi, 51.

marginata, 51.

luctuosa, 51, 63, O 206, O 239,

ornata, O 185, O 207, O 330, O 360.

O 364, P 387, P 545.

#### Terebra Terebratula Petiveriana, 41, 51. Japonica, 54. robusta, 24, O 206, O 230, O nitens, 166, O 367. 267, O 282, O 330, O 350. physema, 54. rudis, 51. psittacea, O 218, O 223. rufocinerea, 51, O 258. pulvinata, 18, 72, O 210, O 213, Salleana, 41. 0 298, 0 348. specillata, 41, 101, O 206, O 267, radiata, 54. 0 268, 0 330. transversa, 72. strigata, 10, 46, 51, 155, O 174, unguiculus, 93, 97, 122, 249, 0 207. 250. strigosa, 61. uva, 54, 0 265. stylata, 51. vitrea, 54, 72. subnodosa, 51, O 258. Terebratulina textilis, 0 206. Japonica, 54. tuberculosa, 154, 177, O 206, radiata, 54. O 268. Teredo fimbriata, 91. uva, 0 330. waricosa, 177, O 206, O 268. substriata, O 367. variegata, 51, 61, 0 235, 0 239, Thaumastus O 285, O 288, O 352, P 384, Californicus, 158. P 463, P 545. Theliostyla zebra, 10, 41, 51, 0 207. Bernhardi, P 257. Terebratella. Theora angustata, 250. lubrica, 73. caput-serpentis, 93, 122. . Thracia caurina, 18, 97, 122. alta, O 280. Coreanica, 122, 169. ourta, 26, 88, 124, O 194, O 300, dorsata, 122. 0 349, ₹ 210. frontalis, 122. granulosa, O 231. globosa, 122. mactropsis, 79. miniata, 20, 72, 122. phaseolina, 202. vitrea, 122. plicata, 27, 50, O 231, O 297. Terebratula 0 352. squamosa, 105, O 287, O 300, O augusta, 54. Belcheri, 54. 366, Q 229. Californica, 54, 60, 72, O 289. trapezoides, 165, O 367. villosiuscula, O 366. caput-serpentis, 54, 249, 250. caurina, 18, 54, O 210, O 298, Thylacodes 0 348. contortus, 43, 44. contortula, 43, 44. dilatata, 54. frontalis, 20, 0 218, 0 221, 0 cruciformis, 43. 223. electrina, 43. var. indentata, 43. Gaudichaudi, 54. favosa, 43. globosa, 54, 72. Grayi, 70, 72. oryzata, 44.

Thylacodes
repens, 43.
Rüsei, 43.
squamigera, 43.
Tiara
foraminata, O 185, O 261, P
460.
muricata, O 185.
Tivela
arguta, 60.
Tonicia
Brandti, O 317.
crenulata, O 317.
Eschscholtzii, O 317.
Forbesii, O 252, O 317, P 193.
insignis, O 317, 1 193.
lineata, 134, 170, O 317.
var. 134.
lincolate 124 170
lineolata, 134, 170.
Merckii, O 317.
Sitchensis, O 317.
Torinia
areola, O 192, P 407.
bicanaliculata, O 333.
granosa, O 259, O 333, P 408.
rotundata, 36.
variegata, 24, 32, 63, 69, O 192,
O 238, O 259, O 274, O 297,
O 333, O 363, P 407.
Tornatella
punctocælata, 132, 307.
Tornatellina
Cumingiana, O 186, O 315.
Tornatina
carinata, 37, 97, 133, 194, O 250,
0 313, P 171.
oerealis, 23, 133, O 227, O 313,
O 349, P 171, U 203.
culcitella, 23, 133, O 313, O 349,
U 203.
eximia, 89, 90, 133, 166.
inculta, 79, O 227, O 313, O 351,
U 203.
infrequens, 154, 194, O 250, O
275, O 313, O 366, P 171.
gracilis, P 171.
-

Trachydermon dentiens, 135. flectens, 135. Gothicus, 98, 135. Hartwegii, 135. interstinctus, 135. Nuttallii, 113, 135. pseudodentiens, 98, 135. reteporosus, 135. trifidus, 135. Trapesium Californicum, 102, O 306, O 349. Tresus capax, 76. maximus, 11, 123, O 192. Tribulus Carolensis, P 480. Trichotropis Atlantica, O 217. bicarinata, 48, 61, 70, 71, 0 176, 0 220, 0 223, 0 328. borealis, 20, 146, 176, O 211, O 217, 0 223, 0 328, 0 347, 0 348. cancellata, 20, 114, 147, O 206, 0 210, 0 211, 0 213, 0 217, 0 328. ciliata, 72. coronata, 70, 72. costellata, O 217. Gouldii, 40, O 288. inermis, 114, 146, O 207, O 217, 0 328. insignis, 70, 71, O 217, O 223, 0 328. multicaudata, 70. Sowerbiensis, 61, 0 220. umbilicata, 0 217. Trigona

æquilatera, P 549.

246, O 305, P 58. bicolor, O 366, P 59. Byronensis, O 246, P 54corbicula, O 232, O 234.

argentina, 27, O 202, O 234, O

Trigona crassatelloides, 10, 22, O 196, 0 229, 0 232, 0 234, 0 246, O 305, O 349, O 351, P 58, V 216. Dillwyni, P 55. gracilior, P 55. Hindsii, 23, 154, 155, O 241, P -, var. O 229, O 366. humilis, O 246, O 305, P 57. intermedia, P 55. mactroides, 60, O 192, O 229, O 364, P 55. nitidula, 106. planulata, 23, 27, O 229, O 234, O 246, O 305, O 366, P 59. radiata, 27, 106, 201, O 192, 0 229, 0 232, 0 234, 0 241, O 246, O 305, O 364, P 54, P 55, P 56, P 58, P 59. semifulva, P 56. stultorum, 10, 12. tantilla, O 229, O 305, U 201. tripla, O 366, P 55. undulata, P 59. ventricosa, P 55. Trigonella crassatelloides, O 196, O 207, O 296, O 353, O V 216. Triodopsis loricata, 157. Mullani, 157. omphalia pulcherrima, 121. Triforis Triphoris 5 adversa, 99, 114, 146, 169. alternata, 36, 110, 155, 186, O 256, O 272, O 325, P 341. inconspicua, 32, 186, O 256, U 272, O 325, P 341, P 342. infrequens, 32, 186, O 256, O 272, O 325, P 342. Triopa

Catalina, 95.

Triton anomalus, O 205, O 337. cancellatus, 83, O 218. Chemnitzii, 182, O 188, O 235, O 238, O 261, O 265, O 270, P 455, V 209. ciliatus, O 218. cingulatus, 182. clandestinus, O 292, O 338, O constrictus, 182, O 231, O 270, 0 337. crebristriatus, O 284, O 337, 8 165. decussatus, O 270. elegans, 61. eximius, O 284, O 337. fusoides, 182, O 270, O 337. gibbosus, O 182, O 270, O 337. lignarius, 24, O 182, O 205, O 271, 0 337. lineatus, O 182, O 188, O 360. nodosus, O 261, P 455. Oregonensis, 83, 119, O 210. pagodus, 178, O 186, O 268, O 292, P 497, P 552. parvus, O 284. perforatus, O 261, O 265, P 455, **V** 209. pilearis, 24, O 364. pictus, O 185, O 292, O 337, 0 360, 8 166. reticulatus, O 183, O 188, O 337, 0 360. scaber, 10, O 179, O 347. scalariformis, O 182, O 337. siphonatus, O 235. Sowerbyi, O 188, O 337, O 360. tigrinus, 18, 24, O 182, O 211, 0 212, 0 337. turriculatus, O 188, O 360. vestitus, 110, 0 205, 0 270, 0 337, 0 364.

_____, var. senior, O 270.
Tritonia
arborescens, O 218.

# Tritonia Palmeri, 94. Reynoldsii, O 218. Tritonidea gemmata, P 516. pagodus, O 231, O 235. ringens, P 518. sanguinolenta, P 517. Tritonium angulosum, 60. antiquum, 19, 69, O 217, O 220, 0 223. Baerii, 19, O 217, O 223. Behringianum, O 220. Behringii, 19, O 217, O 223. cancellatum, 20, O 218, O 223. carinatum, 60. cassidariæforme, 70. Chemnitzii, O 177. clathratum, 20, O 217, O 223. commune, O 220. contrarium, O 217, O 220, O 223. decemcostatum, 20, 83, O 217, 0 223. decussatum, O 171. deforme, O 217. fornicatum, O 220. gracile, O 217. hæmastoma, O 171. Islandicum, O 217. intertextum, O 188. lignarium, O 238, P 544. luridum, 19, O 217, O 223. macrodon, O 171. Mediterraneum, O 188. Mörchianum, 60. nodosum, O 238, P 544. Norvegicum, O 217, O 220, O Ochotense, 19, O 218, O 221, O 223. ooides, 19, O 218, O 223. Oregonense, 69.

ovoides, O 221.

ovum, O 223.

Tritonium reticulatum, O 188. Rombergi, 60. rutilum, 60. Sabinii, O 217. scabrum, 20, O 218, O 224. scalariforme, O 238, P 544. Schantarioum, O 217, O 220, 0 221, 0 223. simplex, 19, O 218, O 221, O Sitchense, 18, 19, O 217, O 223. tenebrosum, O 217, O 218, O 221, 0 223. undatum, 19, 0 217, 0 221, 0 223. verrucosum, O 263, P 517. Triumphis distorta, O 288. Trivia Californica, 23, 27, 143, 151, 0 328, 0 349. var. fusca, O 258, O 328, O 360, P 378, P 545. Maugeriæ, O 328, O 360. Pacifica, 24, 27, 101, 109, 0 328, 0 360. pediculus, O 364. pulla, 24, O 258, O 328, O 360, P 379. pustulata, 24, 27, 109, O 258, O 282, O 328, P 375, P 545. radians, 27, 109, O 258, O 282, O 328, P 376, P 377. rubescens, O 328, O 360, P 378. sauguinea, 27, 101, 109, O 258, O 328, P 379, P 545. Solandri, 27, 99, 109, 143, 151, O 192, O 258, O 328, P 376, P 377. subrostrata, O 258, O 328, O 364, P 379, P 545. suffusa, O 192, O 328, O 360, O 364, P 379. Trochatella conica, O 239, P 545.

Trochus

```
Trochatella
    Lamarckii, O 239, P 266, P 545.
    mamillaris, 0 190.
    trochiformis, O 190, P 265.
Trochiscus
    convexus, 23, 138, 282.
    Norrisii, 23, 27, 138, 151, O
      177, 0 200, 0 235, 0 321, 0
      349, V 224.
Trochita
    aspera, 52.
    corrugata, 52.
    oostellata, 82.
    Diegoana, 76.
    radians, 28, O 179, P 264, P 265.
    solida, 52.
    spirata, 28, 52, O 240, O 323,
      P 265.
          –, var. 28.
    subreflexa, 52.
    ventricosa, 76, O 254, O 323,
      P 264.
Trochus
    angulatus, P 352.
    annulatus, 3, 4, 5.
    amietus, O 203, O 253, P 229.
    Antonii, P 233.
          - var. 0 230.
    ater, 19, 0 216, 0 224, 0 230,
      0 235.
    aureotinctus, O 233, O 240, V
      224.
    auripigmentum, 54.
    balænarum, 10, O 204, P 230.
    Belcheri, O 296.
    Brazilianus, O 253, P 234.
    brevispinosus, O 204, O 253, P
      227.
    brunneus, O 233.
    Buschii, O 229, P 227.
    Byronianus, O 179, O 229, O
       253, P 234.
    cælatus, 4, 5.
    Californianus, O 199.
```

```
callicoccus, O 296.
calyptræformis, P 552.
canaliculatus, 3, 4, 5.
castaneus, O 200, O 240, O 286,
  V 224.
cateniferus, O 200, O 233, O 240,
  V 224.
catenulatus, 191, O 238, O 274,
  P 352, P 542.
conulus, O 163.
coronulatus, 191, O 274.
costatus, 3, 84.
decarinatus, 6.
diadematus, 14.
digitatus, 53.
disculus, O 225, O 274, P 535.
doliarius, 4, 5, 8, 0 200, 0 230,
  O 233, O 234, ♥ 224.
dorsnosus, O 274.
erythrophthalmus, O 253, O
  296, P 227.
euryomphalus, 19, O 216, O 224.
eximius, O 253, P 232.
filosus, 19, 84, O 179, O 200,
  0 209, 0 230, 0 234, 0 349,
  O 351, V 224.
Fokkesii, 19, O 224, P 223.
gallinus, O 200, O 230, O 235,
  O 240, V 224.
gibberosus, 53.
gigas, 53.
glomus, O 238, O 253, P 236,
  P 542.
Hillii, O 240.
inæqualis, 3, 4.
inermis, O 229, O 293, O 296.
in-fauce-nigerrimus, 28.
Japonious, 53.
Leanus, 36, 191, 0 274.
ligatus, 84, O 200, O 209, O 230,
  O 286, V 224.
ligulatus, O 238, P 235, P 542.
lima, 14, 36, 191, 272, O 274.
lividus, 36, 192, O 274.
luridus, O 200, ♥ 224.
```

Californicus, 35, O 233.

callichrons, O 296.

```
Trochus
    MacAndress, O 253, O 284, P
      232.
    magus, P 235.
    marcidus, 21, O 227, U 204.
    melanostoma, 28.
    Melchersi, O 238, O 253, P 227,
      P 541.
    metaformis, O 296.
    minutus, O 238, O 253, P 233,
      P 541.
    modestus, 18, 19, 84, O 223.
    moestus, 19, 79, O 212, O 216,
      0 224, 0 230, 0 234, 0 265,
      0 284, 0 352.
    Montereyi, O 227, O 233, U
      204.
    neritoides, O 296.
    Norrisii, O 230.
    Novæ-Zelandiæ, 4.
    nucleus, O 296.
    olivaceus, 29, O 179, O 233, O
      238, O 253, O 296, P 227, P
       541.
    pallidus, O 200, V 224.
    Panamensis, 192, O 229, O 274,
    pellis-serpentis, 10, 60, 192, 0
       179, 0 274.
    pellucidus, 14.
    perlatus, P 352.
    perspectiviunculus, O 238, P
       407.
    Pfeifferi, O 233, U 204.
    pica, U 204.
    picoides, O 228, O 229, O 362,
       U 204.
    pulligo, 4.
    pupillus, 18.
    purpuratus, 0 240.
    pyriformis, O 228, O 233, U
       204.
    radiatus, 61.
     reticulatus, 36, 192, O 229, O
       253, O 270, P 234.
```

rubiginosus, 14.

Trochus Schantarious, 84, 0 216, 0 220, 0 223. solaris, 61. stellaris, O 238, O 253, P 230, P 541. striatulus, O 233. strigilatus, 10, 60, 0 274. suavis, O 296. undatus, 10 undosus, 10, 53, O 179, P 230, unguis, 53, O 179, P 229. unidens, P 352. variegatus, O 238, P 407. versicolor, O 238, O 253, O 286, P 231, P 541. wirgineus, 4, 5, 0 200, 0 213, O 233, O 234, O 286, V 224. viridulus, O 274, O 283. vittatus, 119. Trophon Bamfii, 0 217. Barvicensis, 324. canaliculatus, O 217. cancellinus, O 343. clathratus, 20, 71, O 173, O 217, 0 223, 0 343. corrugatus, O 343, O 348. crassilabrum, O 226. crassus, 73. Fabricii, 17. fimbriatulus, 25, 324. Gunneri, 149, O 217. Hindsii, O 205, O 343. incomptus, 73. labiosus, O 296. lamellosus, O 347. Magellanicus, 93, 170. multicostatus, 6, 49, 89, 149, 169, 170. muricatus, O 205. muriciformis, O 293. Orpheus, 17, 92, 149, 322, O

343, 0 348.

tenuisoulptus, 25, 322, 324.

```
Trophon
                                      Turbo
    triangulatus, 99, 149.
                                          fluctuatus, O 192, O 253, P 223.
Truncaria
                                               -, var. O 293, Q 234.
    corrugata, 25, 148.
                                                –, var. depressus, Q 234.
    eurytoides, 104, 220.
                                          fluctuosus, O 179, O 233, O 236,
    modesta, 25, 180, O 231, O 270,
                                            O 237, P 223, P 536, P 541.
      0 342.
                                          Fokkesii, 19, 60, 0 216, 0 233,
Truncatalla
                                            O 253, O 351, P 223.
    assiminea, 0 275.
                                          funiculosus, O 288, O 293, P
    Bairdiana, 154, 194, O 275, O
                                            223.
      326.
                                          margarita, 0 216.
                                          marginatus, 49, 0 200, 0 291.
    Californica, 60, 100, 143, 156.
    dubiosa, 37, 194, O 275, O 326.
                                          mœstus, 49.
                                          muriatious, O 220.
    gracilenta, 156.
    Montagui, P 363, P 364.
                                          pellis-serpentis, O 170.
Turbinella
                                          petholatus, 63.
                                          phasianella, 31, 36, 63, 192,
    acuminata, 48, O 271, O 292.
    ardeola, O 171, O 261, O 338,
                                            214, 0 274.
      P 456.
                                          pulcher, 48.
                                          pustulatus, O 230.
    armata, 0 182.
    castus, 27, 183, O 171, O 238,
                                          rotelliformis, 0 200.
      O 261, O 271, O 338, P 456,
                                          rutilus, 37, 192, O 274, O 320.
      P 458, P 544.
                                          sanguineus, 3.
    callosa, O 269.
                                          saxosus, 10, 192, O 179, O 186,
    castanea, 183, O 177, O 271, O
                                            0 230, 0 274.
                                          squamiger, O 187, O 230, O 360.
      292.
    cerata, 61, 183, O 177, O 271,
                                          var. striulatus, 36.
                                          tessellatus, O 230, O 291.
      0 292, 0 294, P 457.
    cingulata, O 294, P 457.
                                          ulvæ, O 220, P 361.
    muricata, P 456.
                                          unguis, P 229.
    nodata, O 188.
                                          variegatus, 36.
                                          ventrosus, O 220.
    rigida, 10, O 177.
                                      Turbonilla
    rudis, 183, O 271.
    spadicea, 183, O 271.
                                          aspera, 118, 323.
    tectum, O 292.
                                      Turris
    tubercularis, 61, O 294.
                                          funiculata, P 390.
    tuberculata, O 182.
                                      Turritella
    varicosa, 10, O 188.
                                          altilira, 80.
                                          Banksii, 36, 154, 186, O 256,
Turbo
    bicarinatus, 61, O 174.
                                             O 272, O 291, O 325, P 330.
    Buschii, 36, 192, O 274.
                                          biseriata, 77.
    carneus, O 216.
                                          Broderipiana, O 190, O 256, P
    cinereus, O 216.
                                             330.
    coccineus, 3.
                                          Californica, P 330.
    digitatus, O 203, O 253, P 229.
                                          Cooperi, 98, 141.
    eximius, 31.
                                          Cumingii, O 256, O 291, P 332.
```

Turritella

# Cumingii, var. 108. erosa, 71. Rachrichtii, 17, 19, 84, 310, O 223, 0 325. fascialis, O 187, O 325. Gatunénsis, 80. goniostoms, 24, 27, 36, 153, 186, 0 170, 0 190, 0 192, 0 230, O 237, O 256, O 291, O 325, O 364, P 330, P 359, P 540. 🗕 var. O 291. Hookeri, O 256, P 330, P 540. imbricata, O 235, O 256, O 364, P 332, P 536. Inezana, 82. Jewettii, 25, 141, 323. lævis, O 325. lentiginosa, O 256, O 291, O 325, P 330. lineats, 75. leucostoma, 153, 154, O 170, O 256, P 332. meta, O 364, P 330. nodulosa, O 187, O 325. obruta, 75. papillosa, O 187. punctata, 152. rubescens, O 187. sanguines, 108, 141, 323, O 178, 0 291, 0 297. tigrina, 27, 108, 153, O 235, O 237, 0 256, 0 272, 0 293, 0 364, P 332, P 540. - var. 0 291. Uvasana, 75. variata, 82. Turtonia minuta, 71. Tyleria fragilis, O 245, O 300, P 25, P 531, P 547.

Tympanotonus

Typhis

Gallapaginis, P 338.

fimbriatus, O 287, O 345.

Typhis grandis, O 287, O 297, O 345. quadratus, O 205, O 345. Umbrella ovalis, 52, 0 284, 0 313, S . 161. Ungulina luticola, 15. Unio Aztecorum, O 295. batavus, O 222. cyrenoides, O 295, O 309. Dahurious, O 222. famelicus, 163, O 210, O 213, 0 309. Liebmanni, O 295. lateolus, 116. margaritifera, O 222. Mexicanus, O 295. Mongolious, O 222. nuculinus, O 295, O 309. Oregonensis, 164. pictorum, 0 222. **Uvanilla** Buschii, 36, O 320. inermis, 24, 36, 192, O 253, O 274, O 320, P 229. olivacea, 27, 36, 108, 192, O 204, 0 235, 0 253, 0 282, 0 320, P 227, P 229, P 231, P 530. unguis, 108, 256, O 203, O 253, O 282, O 320, P 229, P 309. variegatus, O 253. Usita nodulifera, P 496. versicolor, P 499.

Valvata
obtusa, 215.
piscinalis, O 222.
sincera, 162.
tricarinata, 163.
virens, 162.
Vanicoro (see Narica)

eryptophila, O 254, P 262.

# Vasum cæstus, P 456. Velutina coriacea, O 216, O 223, O 337. cryptospira, 20, O 216, O 220. haliotoidea, 71, O 216, O 223. Kamtschatkana, 147. lævigata, 14, 89, 147, 169, O 216. Mülleri, 14, O 203, O 216. prolongata, 114, 147, 245. Sitchensis, O 286, O 337. spongiosa, O 223, O 337. zonata, 71. Venericardia borealis, 17, 97, 128, 165, 168, 170. crassa, 106. crassicostata, IO. laticostata, 23. radiata, 23. ventricosa, 25, 97, 118, 128. Venerupis Cordieri, 86, O 196. — var. V 214. cylindracea, 45. foliacea, 0 281. gigantea, 14, 20, 86, O 196, O 203, 0 219, 0 223. Nuttallii, 74. paupercula, O 289. Petitii, 86, O 203, O 219, O 223, 0 232. Venus Adamsii, 57, 70. amathusia, 38, 201, O 229, O 232, 0 234, 0 247, 0 278, 0

282, O 289, O 306, O 358, P

ampliata, 18, O 213, O 305, O

astartoides, 70, 88, O 219, O 221,

72, ¥ 217.

angustifrons, O 367.

asperrima, 55, 56.

0 223, 0 305.

348.

# Venus bilineata, 57. biradiata, O 178. bisecta, O 367. brevilineata, O 367. calcarea, 18, O 210, O 305, O 348. Californiana, 12, 55, 56, O 351. Californica, O 232, O 285. Californiensis, 12, 40, 56, O 191, 0 232, 0 234, 0 285, 0 305, O 352, V 216. – var. O 285. callosa, 56, 57, O 232, V 216. cancellata, O 236, O 364, P 72, P 80, P 539. cardioides, 55, 56, 57. casina, 55. oingulata, 55, O 185. circinata, O 363, P 69. Columbiensis, O 185, O 232, O 247, O 282, O 306, O 352, P. 75. compta, 55, 56, 57, O 232. Cortezi, 56. crassa, 55. crenata, 55. crenifera, 55, O 185, O 208, O 247, O 306, O 364, P 74. orenulata, 55, 56. Cuvieri, 14. cycloides, 39, P 60. Cypria, 57. decorata, O 176. decussata, var. P 32. dione, 0 266. discors, 38, 55, 201, O 185, O 229, O 247, O 278, O 284, P dispar, 102, O 196, O 283, O 305, O 351, V 215. distans, O 247, O 296, O 306, P 74.

elevata, P 74.

encausta, O 289.

entocapta, O 247, P 77.

Venus

perdix, 0 203.

Pinacatensis, 55.

planulata, O 191, P 59.

Portesiana, 55, O 247, P 74.

# Venus excavata, 56, O 305, O 351, V 216. eximia, 55. fluctifraga, 56, 57, 78, O 232, O 0 284, 0 351, 0 352. fluctuosa, 70. fuscolineata, 30, 0 185, 0 306. gibbosula, 56, 57. gnidia, 47, 57, 201, O 161, O 175, 0 229, 0 232, 0 234, 0 241, 0 247, 0 279, 0 306, 0 358, P 71, V 215. granulata, 55. grata, 55, O 229, O 284, P 77. Guineensis, P 69. histrionica, 86, O 185, P 76. intersecta, 56. Kellettii, O 207, O 306. Kennerleyi, 39, 55, 86, 88, 127. Lamarckii, 56. lamellifera, 86, O 196, O 232, O 367, ♥ 214. laticostata, 14. leucodon, 40, 55, O 285, V 216. var. lilacina, 56. Listeri, var. 55. lupinaria, P 67. maxima, 86. mercenaria, 18, 0 210. multicostata, 14, 55, 201, O 185, 0 278. mundulus, 12, 56, 304. muscaria, 57. neglecta, 55, 56, 57, O 161, O 170, 0 178, 0 191, 0 208, 0 247, O 306, O 364, P 77. Nuttallii, 12, 56, 57, 78, O 232, 0 284, 0 305, 0 349, 0 351, 0 352, ₹ 216. ornatissima, 57, O 185, O 306. Pajaroana, 81. paphia, 57, 61. pectorina, 55. pectunculoides, 14, 201, 0 203, O 278.

```
pulicaria, 55, 56, O 185, O 305.
   punctata, P 97.
   radiata, 6, 14, P 74.
    reticulata, O 232, O 305, O 352.
   rhysomia, 118.
   rigida, 12, 17, 18, 57, 70, 86, O
      210, 0 284, 0 305.
    ruderata, 12, 17, 56, 304.
    simillima, 55, 56, O 232, O 289,
      O 305, V 216.
    Solangensis, O 191, O 246, P 54.
   staminea, 57, 86, 0 196, 0 straminea, 232, 0 234, 0 284,
                   O 352, V 215.
           - var. O 232.
    Stimpsoni, 73.
    Stutchburyi, 56.
    subimbricata, 57, O 185.
    subrostrata, 56.
    subrugosa, 47, 201, O 178, O
      278.
    subsulcata, O 278.
    succincts, 7, 12, 55, 56, 78, O
      170, P 72, P 549.
    sugillata, 55, 201.
    sulcata, O 221.
    tantilla, O 227, U 201.
    Thouarsii, 14, O 278.
    tigerina, P 96.
    toreuma, 101.
    tricolor, 55, O 247, P 77.
    tumida, 304.
    undatella, 57, O 247, O 285, O
      305, P 75.
Vermetus
    anellum, 43.
    centiquadrus, 43, O 204, P 302,
      P 303.
    contortus, 43.
```

corrodens, 43.

eburneus, 24, 32, 37, 42, 194, O

```
Vitrinella
Vermetus
      175, O 185, O 255, O 324, O
                                         cincta, O 253, O 321, P 245, P
      367, P 304.
                                            246.
                                         clathrata, O 357, P 238.
   effusus, 42.
                                         concinna, 190, O 273, O 322.
    glomeratus, 32, 37, 194, O 235,
      O 237, O 255, O 275, P 305,
                                         coronata, O 253, O 321, P 244.
                                         decussata, O 253, O 321, P 239,
     P 306, P 536, P 540.
                                            P 240.
   Hindsii, 42, P 304.
                                         exigua, 190, O 253, O 273, O 322.
   lumbricalis, 42, P 301, P 306.
                                         interrupta, P 237.
   macrophragma, 43.
   margaritarum, 0 204.
                                         Janus, 190, O 273, O 322.
                                         lirulata, O 253, O 321, P 241.
   margaritifera, 43.
                                         megastoma, P 237.
   Panamensis, 37, 43, 194, O 237,
                                         minuta, 36, 190, O 273, P 237.
      O 255, O 275, P 306, P 540.
                                         modesta, 190, O 273, O 322.
   pellucidus, O 175, O 255, P 304.
                                         monile, O 253, O 321, P 240.
   Péronii, 43, O 204, O 255, O 324,
                                         monilifera, O 253, O 321, P 240,
      P 302.
                                            P 241.
   tulipa, 43.
                                         naticoides, O 253, O 321, P 246.
   varians, 43, W 315.
                                         orbis, O 253, O 322, P 247.
Vermiculus
                                         ornata, 34, 258.
   centiquadrus, 42.
                                         Panamensis, 108, 191, O 253, O
    eburneus, 42.
                                            273, O 322, P 238, P 239.
    effusus, 42.
                                         parva, 191, O 253, O 273, O 322,
   incurvatus, X 436.
                                            O 357, P 238.
   pellucidus, 42.
Vertagus (see Rhinoclavis)
                                         perparva, 191, O 273, O 322, P
    fragraria, 0 325.
    gemmatus, O 170, O 230, O 256,
                                                - var. nodosa, O 253, P
      O 325, P 339.
                                         planospirata, O 253, O 322, P
Verticordia
    novemostata, 131, 168, 170.
                                         regularis, 36, 191, O 273, O 222.
    ornata, 98, 131, 170.
                                         seminuda, 191, O 274, O 322.
Vexilla
                                         spiruloides, T 169.
    fuscolineata, 102.
                                         subquadrata, O 253, O 321, P
Vitrina
    diaphana, 118.
    pellucida, O 222.
                                          tenuisculpta, 34, 258.
    Pfeifferi, 118, 157.
                                          tineta, P 237.
                                          tricarinata, 191, 256, O 274, O
Vitrinella
                                            322, P 244.
    annulata, O 253, P 245.
                                          trigonata, P 244.
    bifilata, O 253, O 321, P 241.
                                          valvatoides, 36, 191, 0 274, 0
    bifrontia, O 253, O 321, P 242,
      P 245.
                                            322, P 237.
    carinulata, 191, O 253, O 321,
      P 246.
                                          picta, O 4, P 259.
```

Vitularia	Waldheimia
aspera, 90.	Californica, 99, 122, 169, 250,
Belcheri, O 340.	0 298.
lactuca, 92.	
	Coreanica, 20, 72, 113, 122, Koreanica, 169.
salebrosa, 13, 25, 34, 151, 152, 182, 0 177, 0 201, 0 235, 0	
	dilatata, 54.
262, O 282, O 340, O 361, O	globosa, 54, 99, 122, 250.
366, P 485. vitulina, O 366.	Grayi, 70, 97, 122, 169.
Volsella	pulvinata, 18, 122, 166.
splendida, 41.	transversa, 72.
Voluta	Triotura
Barnesii, 40.	Xylotrya
• •	fimbriata, 122, 168.
cærulea, O 178, O 268. coffea, P 178.	palmulata, 122.
, ·	pennatifera, 113, 122, 168.
Cumingli, O 181, O 292, O 339.	Yoldia
dama, O 177, 178, P 471.	
harpa, 10, 40, O 178, O 188, O 231, O 339.	amygdala, 89, 131. arctica, 131.
incrassata, 9, O 261, O 292, P	hyperborea, 71.
464.	lanceolata, 89, 131, 169.
lens, 10, O 185.	limatula, 71.
nucleus, 10.	myalis, 71.
nux, 10.	thraciæformis, 70.
ocellata, O 262, P 487.	turaciæiormis, 70.
plumbea, 7.	Zaphon
tenebrosa, 10, 0 262, 0 268, P	, <del>-</del>
468.	elegans, 17. Zebra
<b>Volutella</b>	
margaritula, 39, 110, 147, 316.	Mülleri, 59. Zemira
pyriformis, 147, 316.	Kelletii, 40.
Volutharpa	Zierliana
ampullacea, 70.	solitaria, 177.
Volutilithes	Zirphæa
Californiana, 75.	crispata, 88, 97, 123, 168.
Sayana, 75.	Ziziphinus (see Calliostoma)
Volvarina	annulatus, 5, 0 200, 0 286, V 224.
fusca, 24, 154.	Antonii, 53, 272, O 320.
serrata, 23, 24.	Californicus, 40, 53, O 253, O
varia, 23, 24, 100, 111, 112,	286, P 231.
147.	canaliculatus, 5.
Volvula	eximins, 53.
oylindrica, 23, 133, 281.	filosus, O 192, O 286, O 320.
Vulsella	Leanus, O 321.
Nuttalli, O 193.	lima, O 321.
, 0 .73.	ша, О 321.

Ziziphinus

M'Andress, O 284, O 321. Panamensis, O 321. versicolor, O 320. Zonites

cultellata, 159. electrina, 92. excavata, 92.

·		·	

# SMITHSONIAN MISCELLANEOUS COLLECTIONS.

____ 227 ___

# ARRANGEMENT

OF THE

# FAMILIES OF MOLLUSKS.

PREPARED FOR THE SMITHSONIAN INSTITUTION

BY
THEODORE GILL, M. D., Ph. D.



WASHINGTON:
PUBLISHED BY THE SMITHSONIAN INSTITUTION,
PEBRUARY, 1871.

• . .

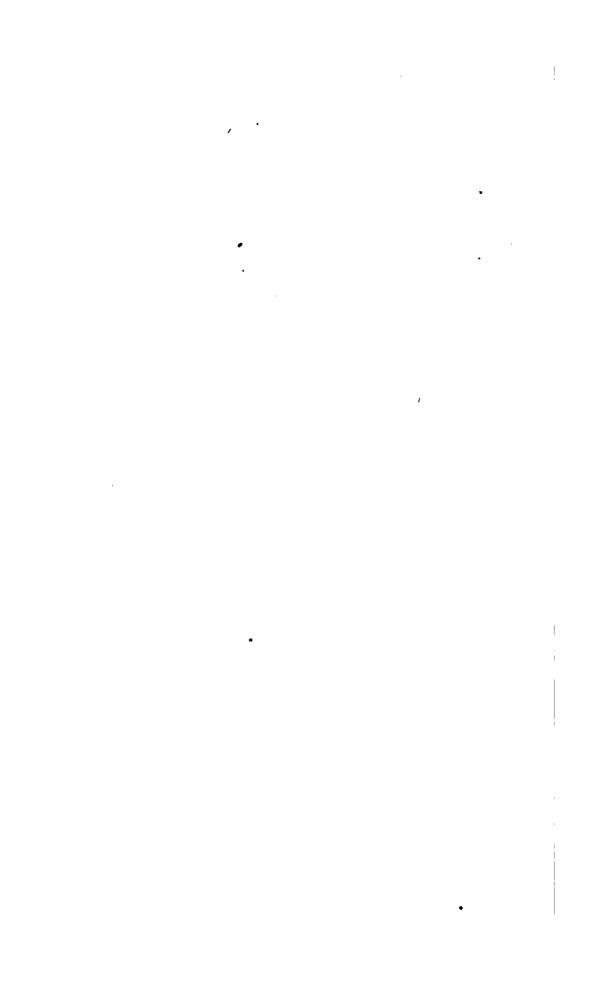
# ADVERTISEMENT.

THE following list has been prepared by Dr. Theodore Gill, at the request of the Smithsonian Institution, for the purpose of facilitating the arrangement and classification of the Mollusks and Shells of the National Museum; and as frequent applications for such a list have been received by the Institution, it has been thought advisable to publish it for more extended use.

JOSEPH HENRY, Secretary S. I.

SMITHSONIAN INSTITUTION,
WASHINGTON, January, 1871

ACCEPTED FOR PUBLICATION, PEBRUARY 28, 1870.



# CONTENTS.

			PAG					AGE				
I.	Introduction	•	•	•	•	•	•	•	•	•	•	vii
**	LIST OF FAMILI										_	1
41.	Sub-Branch		•		•	•	•	•	•	·		1
					•	•	•	•	•	•	•	_
	Class C	-	-		•	•	•	•	•	•	•	1
				Dibra			•	•	•	•	•	1
		44	2.	Tetral	orand	hiata	•	•	•	•	•	2
	Class G	asteroj	pods	, or Ce	phal	ophor	<b>a</b> .	•	•	•	•	4
	Sul	b-Class	Di	0908	•	•	•	•	•	•	•	4
		Orde	r 3.	Pectin	ai bra	nchia	ta				•	4
		. 44	4.	Heter	opod	a .				•		10
		46	5.	Rhipi	doglo	888						10
		46		Docog	_							11
		44		Polyp	•		_					12
	g _m 1	h.Cleas		lmonii	_	,	•					12
	Du			Pulm			•	·	•	•		12
							•	•	•	•	•	14
	50		_	isthob			•	•	•	•	•	14
		0		Tectib			•	•	•	•	•	
		"	10.	Nudit	ranc	hiata	•.	•	•	•	•	15
	Sul	b-Class	Pte	eropoda	٠.	•	•	•	•	•	•	17
		Orde	r 11	. The	:0 <b>8</b> 011	ata	•	•	•	•	•	17
		"	12	. Gym	1080	mata	•	•	•		•	17
	Su	b-Class	Pr	osopoc	epha	la .			•			17
		Orde	r 13	. Sole:	noco	nchæ						17
	Class C	onchif	era									18
				. Dim	varia							18
		"		. Meta								21
		66		. Hete	-							21
							•	-	-	( v	``	

									7	TOE
Order	17.	Monor	nyari	8	•	•	•	•	•	21
66	18.	Rudis	ta	•	•	•				22
Sub-Branch Mollus	ooid	e <b>a</b>	•	•		•	•	•		23
Class Tunicata		•	•			•	•	•		23
Order	19.	Sacco	branc	hia	•		•	•		23
"	<b>2</b> 0.	Dacty	lobra	nchia		•	•	•		24
"	21.	Tænio	branc	hia	•			•		24
66	22.	Larva	lia	•			•			24
Class Brachiop	oda							•		25
Order	23.	Arthr	opoma	ata		•		•		25
46	24.	Lyopo	mata			•	•			26
Class Polyzoa						•				27
Order	25.	Phyla	ctolæ	mata		•		•		27
66	26.	Gymn	olæma	sta			•	•		27
66	27.	Rhabd	lopleu	ræ	•	•	•	•	•	30
III. LIST OF AUTHORS REFE	RREI	70	•			•	•	•	•	31
IV Inner				_						45

# INTRODUCTION.

# OBJECTS.

THE want of a complete and consistent list of the principal subdivisions of the mollusks having been experienced for some time, and such a list being at length imperatively needed for the arrangement of the collections of the Smithsonian Institution, the present arrangement has been compiled for that purpose. It must be considered simply as a provisional list, embracing the results of the most recent and approved researches into the systematic relations and anatomy of those animals, but from which innovations and peculiar views, affecting materially the classification, have been excluded. The only merit which is claimed for it is the embodiment and co-ordination, it is hoped in a tolerably consistent form, of the taxonomic results of the information scattered through many volumes. There will doubtless be much diversity of opinion respecting the relative value of certain groups, as well as of the characters themselves whose modifications have been used for the limitations of the groups, and the author will not disguise that he himself entertains much doubt respecting certain groups and relationships preserved in the arrangement. It has seemed advisable, however, to provisionally adopt the opinions of those who have most thoroughly investigated the different groups rather than to introduce innovations based on hypothetical considerations, and which would be perhaps found to be liable to as many objections as those adopted

But although, from the very nature and extent of the subject, the present arrangement is a compilation, it nevertheless is likewise the result of researches undertaken by the author with more or less assiduity for a number of years, and, as a whole, it offers a considerable number of deviations from any classification

(vii)

hitherto submitted. It therefore seems proper, especially in view of the fact that this article will have a circulation among many persons who are interested in the collection and study of shells, but who have never paid especial attention to the principles of classification involved in the arrangement of the mollusks, to offer a few prefatory remarks on Taxonomy, or the science of classification, especially so far as those animals are concerned, and to answer the questions that may arise as to why some combinations are made.

#### PRIMARY DIVISIONS.

The classes of Mollusks are by no means allied to each other in equal degree; there are two series that differ very widely, and which have been regarded by many of the best naturalists as primary groups of the animal kingdom; that is, sub-kingdoms or branches. The great majority of the representatives of each of such groups do indeed offer so many special characteristics, and so widely differ from those of the other series, that perhaps the arguments in favor of such a view may be more weighty than those for the opposite. But the members of one class (Tunicata) seem to be in some respects intermediate or at least to narrow the chasm that would otherwise exist between the two, although their affinities are not regarded as dubious by most.

It has been found, after due investigation, that the central nervous system offers in its modifications in the Mollusks, as in the Vertebrates, the best criteria of relationship, and on the number of ganglia have been based the division thereof into the two primary groups, Mollusca vera and Molluscoidea; in the former (Mollusca vera), there are three well developed pairs of ganglia—the cerebral, the pedal, and the so-called branchial (or parieto-splanchnic of Huxley)—each pair being united by commissures; in the latter (Molluscoidea), there is but one well developed pair, homologous with the pedal ganglia of the true Mollusks. Prof. Huxley, that very able biologist who has so much contributed by his clear mind and convincing logic to the education of the younger naturalists of the present day, has well remarked on the impossibility, or at least difficulty not yet surmounted, of the enunciation of a diagnosis which will combine the two divisions, and distinguish that combination from others.

And that difficulty has been strikingly illustrated by the positive withdrawal, by an able naturalist, of at least the Brachiopods and Bryozoans from the true Mollusks, and the combination of them with the Worms. If, then, a deviation from the example of Prof. Huxley and other masters in systematic zoology has been ventured in still retaining the combination of the two groups under the common branch name of Mollusca, it has been because there is still a certain conventional convenience in so doing, and because some members of the lower group (the Brachiopods) are almost always-at least by collectors-considered in connection with the higher forms. Another and more scientific reason is that at the confines of the lower groups, the hiatus between the two appears disproportionately little compared to that between the other branches, and a stricter series of homologies are traceable between the two. Rhodosoma (Schizascus, St.) of the Tunicates, and the recently described Rhabdopleura, Allmann, of the Bryozoans, are especially noticeable in this connection. It may also be added that the difficulty of framing a common diagnosis for the combined types appears to be the result of the diversity of secondary modifications and ramifications, and the extreme specialization of some forms and loss of common primitive characters, rather than of the divergence of the two types from a generalized Proto-zoon or aboriginal primordial stock—an element necessary to be considered in appreciation of the values In such cases, the test must be a series of consecutive inductions, and if those can be rigorously established, the truth cannot be far distant, even though an exclusive diagnosis cannot be applied. Care, however, must be taken not to abuse the privilege of combination without exact diagnosis, and the same latitude is not allowable in smaller and subordinate groups as in the more comprehensive.

#### CLASSES.

With regard to the classes of Mollusks, it is only necessary to state that the Pteropods have been considered as a subclass of Gasteropods, and thus retained in one and the same class with the typical members of the latter, in accordance with the views of most American malacologists, and because the hiatus between them appears to be much less than that between the Cephalopods

and Gasteropods, and of course between those Odontophorous Mollusks and the Conchifers. The Pulmonifers of Cuvier—by some considered as a class apart—and the Solenoconchs—by some considered as also entitled to classic rank, by others referred to the Pteropods, and by others still to the Conchifershave also been retained as sub-classes of the Gasteropods. classification thus accepted is then the same as those already proposed, in 1861, by Prof. Dana' in his "Manual of Geology," and, in 1865, by Prof. E. S. Morse in his "Classification of the Mollusca based on the principle of cephalization." So far as the combination of the Pteropods, Heteropods, and typical Gasteropods into one class, others had also long before indicated the propriety of the innovation. The other groups regarded as of approximately equal value with those, and therefore designated sub-classes, are the Pectinibranchiates and Opisthobranchiates.

#### ORDERS.

Applying to the combinations of the Gasteropods into orders the principle that morphology and not teleology is the guide in natural classification, it becomes necessary to depart from some quite generally accepted schemes, and especially that whereby all the air-breathing mollusks are combined together in contradistinction from those respiring by means of branchiæ. As was perceived long ago by Cuvier, the inoperculated Pulmonifers (except Proserpinidæ) are entirely different from the operculated ones. That great naturalist very justly retained alone in one group the former (the Proserpinide were unknown to him), and thus constituted a truly natural order, while the operculated ones (Cyclostomæ, etc.) were referred to the Pectinibranchiates, and near Littorina, with which the best naturalists still associate them. His ignorance of the structure of the Helicinidæ induced him to retain them near the Cyclostomæ, but had he been acquainted with tnem, he would doubtless have combined them with his Trochoides as they now are. The combination of all the Pulmoniferous Gasteropods into one group, as was afterwards done, was

¹ Prof. Dana has only differed in the depreciation of the value of the primary groups, the *Mollusca* (his ordinary Mollusca) and the Molluscoidea (his Anthoid Mollusca) being considered as classes, and their subdivisions as orders.

a decidedly retrograde step, and thus morphology was entirely subordinated to teleology, and even to a degree seldom equalled in recent times; for the groups enumerated are so very distinct from each other that they have no characters in common except those which they share with others as members of the same class, and the ability to breathe air direct—and even the adaptation for the latter office is affected by different modifications in the several subclasses.

The Heteropods, instead of representing a distinct class or subclass, are perhaps scarcely entitled to ordinal rank, but, as their distinctive characters are not entirely adaptive, they have for the present been accredited with it. Besides the Dentalia (So-LENOCONCHA), the Chitonidæ (POLYPLACOPHORA) have been removed from the association with the Patellidæ and Acmaeidæ, and for the last alone has been retained the ordinal name (Doco-GLOSSA) proposed by Dr. Troschel for all the groups mentioned. It is difficult to understand why the Chitonidæ have been so persistently associated with Patellidæ, except for the reason that after the first discovery of the homologies between the two types, the great differences between them were in a measure lost sight of—a fault common to discoverers of unexpected relationships and that most others have since been content to accept without active thought the approximation at first suggested. larity of the nervous system, recently urged in justification, seems to be more superficial than real, and rather the result of adaptation to the oval depressed form common to both. Although the author has been the first to limit (in manuscript long ago prepared) the order to the families now retained in it, the ordinal name proposed by Dr. Troschel (Docoglossa) being a suggestive one, it has been preferred to a new name.1

It need only be added that the orders of Conchifers and of all the Molluscoids are adopted simply as appearing to be the best that have been devised, and not because they are those likely to be ultimately confirmed, at least with precisely their present limits.

¹ Mr. W. H. Dall, after an extensive study of the anatomy of members of the group, had also arrived at the same conclusions, and was the first to demonstrate the entire want of affinity therewith of the Gadiniidæ.

#### FAMILIES.

The author has applied the views of those who consider those groups, above the rank of genera, combined by numerous common characters, and distinguished from neighboring groups by greater or more abrupt differences than those existing within the limits of such common associations, to be entitled to family rank. In Articulates, Vertebrates, and Radiates, such groups are often recognizable externally by a similarity of form which is dependent on more or less decided modifications of structure, or the relations between different parts. Very often, however-and especially in the Batrachians-such indications fail, and in the Mollusks there are many families that do not differ from each other in form; and, on the other hand, others exhibit a very considerable difference of form among their own representatives. Accepting the views as to the application of the term family to groups as adopted by the students of Mammals, we must apply them as we best can to the Mollusks, and of course we must be prepared for considerable diversity of views in the application, dependent on the personality of the observer. his acquaintance with the groups, and the path by which he has approached the study.

Very many, and probably most of the families now adopted, require revision based on more extensive materials than have yet been available to any one investigator. If any are to be especially pointed out in this connection, those of the orders of Cephalopods, and among the Gasteropods, the Turbinellidæ, Pupinidæ, and the sub-divisions of the disintegrated Helicidæ, Melaniidæ, Cerithacea, and Trochacea, may be indicated. But, because their affinities are doubtful, they have been for the present retained, for it is believed that the evils resulting from heterogeneous combinations (not definable by diagnosis) is greater than those resulting from refinement of analysis.

The acquaintance of the author with the Polyzoa being ex-

¹ The Turbinellidæ are retained as distinct on the authority of a very distinguished naturalist, who has kindly informed me that they are "Stromboidæ." I have not ventured to separate them, however, farther from the Cynodontidæ till more is known.

tremely limited, he has adopted without modification the classification of Broun (who has availed himself of all the information published up to his time), except for the Phylactolæmata, for which he has followed Prof. Hyatt, who has since thoroughly studied that order.

The details of classification of the families are yet too unsettled to warrant the retention of the many sub-families which have been proposed, and while the necessity for the adoption of such subordinate groups is readily foreseen and admitted, so few have been characterized in a manner which could be maintained against criticism or justified by valid arguments, that only in exceptional cases have any been admitted.

#### GENERAL CONSIDERATIONS.

In this connection it may be remarked that there is no scientific basis for an a priori assumption that because the modifications of an organ are of a certain importance in one branch or class of animals, they are so in others. While such hints may perhaps be of some use, the value requires to be verified in each instance. Because the modifications in structure of the heart in mammals, birds, and reptiles are of prime importance, it does not follow that they are equally so in batrachians and fishes, and such a view is, indeed, opposed to facts. Still less foundation exists for the a priori application of such ideas to the classification of the mollusks; and their distribution into two series, distinguished by the bilocular (Monotocardian) and trilocular (Diocordian) partition of the heart, certainly seems to be opposed by the indications furnished by the sum total of the organization.

And in like manner, because the modifications of a certain part are the best indexes of affinity in one group of a class, it does not follow that even in the same class, in another group, analogous modifications are of like value. The dentition, for example, is quite characteristic in the mammalian orders Carnivores, Ungulates, and Rodents; but in the Implacentals the value of analogous modifications is very much less, and, within the range of the same order (Marsupials), superficial differences, apparently at least, as great as those between the cited orders of Placentals are found. If, therefore, the modifications of the dentition are used for the distinction of orders in one case, it is not because

the dentition is the most important per se, but because, as a matter of fact and experience, it has been determined that the modifications thereof are the co-ordinates of corresponding, though perhaps not as readily recognizable, modifications of other parts, and being so, they are taken advantage of for diagnostic purposes.

In like manner, as a matter of experience, the groups of the Pectinibranchiate mollusks agreeing in the dentition of the radula appear to agree in other important respects, and therefore the modifications of the teeth of the radula have been made use of as the prime characters, because they appear to be the exponents of the sum total of structure, and until it is shown, by a study and co-ordination of the modifications of the entire structure, that there are other characteristics that are of more importance and better indexes of affinity, and the application has been actually made, it is not evident what other better combinations capable of demonstration and diagnosis—the true criteria can be made. Undoubtedly we have much yet to learn concerning the affinities of all the mollusks, and undoubtedly very considerable, and perhaps fundamental, modifications of classification will be required; but, in addition to objections against a given system, suggestions for reform are at the same time desirable, and then a comparison of the respective merits of the competing systems can be instituted.

As it is evident that the differences of dentition in the Placental and Implacental mammals is of very unequal value, it is no more than might be expected that the dentition in the class of Gasteropods should also vary in value, and it is actually found that while in the Pectinibranchiates the dentition is an excellent index of affinities, it is not so in the Tectibranchiates or Nudibranchiates. In this admitted fact, however, there is no more valid argument against its value in the Pectinibranchiates than in the corresponding case in mammals.

#### EXTINCT FORMS.

With respect to the extinct forms, the compiler has deemed it advisable to accept the views of the most approved students of the groups as to their relations, but has felt obliged to apply to them that indefinite but generally appreciated standard of value which has been used for the living forms, and consequently the

number of extinct families admitted is larger than is generally recognized, especially in the class of Cephalopods. The views of M. Barrande have been implicitly accepted in the arrangement of the families of Tetrabranchiates, save as to the value of M. Barrande has designated the Mollusca as a class, the Cephalopoda as an order of that class, and has subdivided the latter into three families, each comprising a greater or less number of genera. The standard of value applied by that learned naturalist is in each case, but especially in the appreciation of the major groups, very different from that almost universally current, and as the more comprehensive groups are here retained with the higher rank generally accredited to them, the genera are also raised to a more elevated rank: the views of M. Barrande concerning the range of his genera being provisionally accepted, they are each one raised to family rank, and although the author is disposed to dissent from the positions assumed by M. Barrande in respect to the affinities and extent or relative value of certain of his genera, his knowledge of those forms is so vastly inferior to that naturalist's, that he has not ventured in any case to depart from him, even when he would have simply accepted the views of others, for none have had such opportunities for study, or made such good use of them, as he. As the expediency of the extension of family rank to some of the forms may be questioned, it may be remarked that the tendency of some naturalists seems to be to even subdivide still more minutely, Prof. Agassiz and Prof. Hyatt, for example, differentiating the genus Ammonites of most authors into a number of families, and separating ordinally the "Ammonoids" from the Nautilidæ.

In addition to the numerous extinct types of the Cephalopods, there are undoubtedly many among the Gasteropods and Conchifers that are entitled to family rank; but in view of the inability of the author to study many of them, and of our ignorance of their relations, it has been deemed inadvisable to name them.

#### SYNONYMY.

In order to make known the extent of the families adopted, as well as to direct students to reliable sources of information, reference has been made to a specific authority for each family. It has been deemed preferable, however, all other things being equal, to refer to some readily accessible and popular work. But in cases where such works do not give the limits to the families which have been indicated by the most approved researches, references are made to the monographs or other publications wherein the information is furnished. Some of the families, however, have not yet been assigned the limits which, in the opinion of the compiler, appear the most natural; in order, therefore, to indicate as nearly as possible the relative values of the respective groups, the system of notation recommended especially by the late Hugh Strickland has been adopted. there is an exact equivalency, either as to the limits assigned by the diagnosis, or as to the contents, the sign of equality (=) is used; when the group referred to is larger than that adopted, the corresponding sign (<) is prefixed to the former; when the group referred to is smaller, the usual sign indicative thereof (>) is prefixed; and when the group referred to is entirely different, including some forms not in and excluding others retained in the group compared with it, the sign (x) is employed as a prefix. .

#### ACKNOWLEDGMENTS.

In the appended list of authorities, and in connection with the names of the families, will be found the references to those authors who have been followed in especial cases. The compiler would also especially acknowledge his obligations to Mr. W. H. Dall for various kind offices and assistance in the preparation of this list.

#### ARRANGEMENT

OF

# FAMILIES OF MOLLUSKS.

[Adopted provisionally by the Smithsonian Institution.]

N. B.—The Fossil Families are in Italics.

# CLASS A.—CEPHALOPODA.

#### ORDER I.—DIBRANCHIATA.

SUB-ORDER OCTOPODA.

(O. littorales.)

- 1. Cirrhoteuthidae < Octopodidae, Ad. I, 18.
- 2. Octopodidae < Octopodidae, Ad. I, 18.

(O. pelagici.)

- 3. Philonexidae = Philonexidae, Ad. I, 21.
- 4. Argonautidae = Argonautidae, Ad. I, 23.

#### SUB-ORDER SEPIOPHORA.

## (Oigopsidae.)

- 5. Cranchiidae Cranchiidae, Ad. I, 26. Loligopsidae, Ad. I, 27.
- 6. Chiroteuthidae = Chiroteuthidae, Ad. I, 28.
- 7. Onychoteuthidae < Onychoteuthidae, Ad. I, 30.
- 8. Ommastrephidae < Onychoteuthidae, Ad. I, 30.

#### (Myopsidae.)

- 9. Loliginidae < Loliginidae, Ad. I, 35.
- 10. Sepiolidae < Loliginidae, Ad. I, 41.
- 11. Sepiidae = Sepiidae, Ad. I, 41.
- 12. Belosepiidae < Sepiidae, Chenu I, 46.
- 13. Spirulidae = Spirulidae, Ad. I, 44.
- 14. Belopteridae < Spirulidae, Chenu I, 51.
- 15. Belemnitidae = Belemnitidae, Chenu I, 46.

#### ORDER II.—TETRABRANCHIATA.

# (Nautiloidea.)

- 16. Nothoceratidae = Nothoceras, Barr. II, 72.
- 17. Bathmoceratidae = Bathmoceras, Barr. II, 74.
- 18. Trochoceratidae = Trochoceras, Barr. II, 74.
- 19. Nautilidae = Nautilus, Barr. II, 128.
- 20. Hercoceratidae = Hercoceras, Barr. II, 152.
- 21. Gyroceratidae = Gyroceras, Barr. II, 156.
- 22. Lituitidae = Lituites, Barr. II, 168.
- 23. Phragmoceratidae = Phragmoceras, B. II, 189.
- 24. Gomphoceratidae = Gomphoceras, B. II, 243. 25. Cyrtoceratidae = Cyrtoceras, Chenu I, 73.
- $20. \quad \text{Of } 0.47 \quad \text{Classification} \quad = 0 \text{ of } 0.47 \quad \text{Classification} \quad = 1.50$
- 26. Orthoceratidae > Orthoceras, Chenu I, 59.
- 27. Ascoceratidae  $\begin{cases}
  Ascoceras, Barr. II, 334. \\
  Aphragmites, Barr. II, 366. \\
  Glossoceras, Barr. II, 372.
  \end{cases}$

(Goniatitoidea.)

28. Clymeniidae = Clymenidae, Chenu I, 70.

29. Goniatitidae = Goniatites, Chenu I, 75.

30. Bactritidae = Bactrites, Chenu I, 77.

# (Ammonitoidea.)

31. Turrilitidae {
 Turrilites, Chenu I, 95.
 Helicoceras, Chenu I, 96.
 Heteroceras, Chenu I, 96.

32. Ceratitidae = Ceratites, Chenu I, 76.

33. Ammonitidae = Ammonites, Chenu I, 77.

34. Scaphitidae = Scaphites, Chenu I, 91. 35. Crioceratidae = Crioceras, Chenu I, 90.

36. Ancyloceratidae = Ancyloceras, Chenu I, 92.

37. Hamitidae = Hamites, Chenu I, 93.

38. Ptychoceratidae = Ptychoceras, Chenu I, 94.

39. Hamulinidae = Hamulina, Chenu I, 94.

40. Toxoceratidae = Toxoceras, Chenu I, 93.

41. Baculitidae = Baculites, Chenu I, 95.

42. Baculinidae = Baculina, Chenu I, 77.

# CLASS B.—GASTEROPODA.

# SUB-CLASS DIŒCA.

#### ORDER III.—PECTINIBRANCHIATA.

# Sub-Order Toxoglossa.

43. Conidae	= Concidea, Tr. 16.
44. Pleurotomidae	= Pleurotomacea, Tr. II, 38.
45. Melatomidae	= Clionellidae, Stm. A. J. C
	1865, 62.
46. Haliidae	= Haliacea, Tr. II, 36.
47. Terebridae	= Terebracea, Tr. II, 27.
48. Cancellariidae	= Cancellariacea, Tr. II, 45.
49. Admetidae	= Admetacea, Tr. II, 46.

#### SUB-ORDER RHACHIGLOSSA.

# (Typica.)

		(4	(ypica.)
<b>50.</b>	Cystiscidae	=	Cystiscidae, Stm. A. J. C. 1865,
			<b>55.</b>
<b>51.</b>	Marginellidae	<	Marginellacea, Tr. II, 57.
<b>52.</b>	Volutidae	=	Volutacea, Tr. II, 54.
	a. Volutomitrinae	<b>)</b>	Volutomitrina, Gray, 36. Amoriana, Gray, 35.
	b. Volutinae		Yolutina, Gray, 32. Yetina, Gray, 32.

#### (Odontoglossa.)

- 53. Fasciolariidae = Fasciolariacea, Tr. II, 60.
  - a. Fusinae
  - b. Fasciolariinae
- 54. Mitridae = Mitracea, Tr. II, 66.

# (Duplohamata.)

- 55. Melongenidae = Cassidulina, Tr. II, 79.
- 56. Buccinidae < Fusacea, Tr. II, 69.
  - a. Photinae = Photina, Tr. II, 82.
    - b. Buccininae = Buccinina, Tr. II, 69.
    - c. Chrysodominae = Neptunina, Tr. II, 72.
- 57. Nassidae = Nassacea, Tr. II, 87.
  - a. Cyclonassinae
  - b. Nassininae
- 58. Cynodontidae < Fusacea, Tr. II, 69.
  - a. Cynodontinae = Vasina, Tr. II, 84.
  - b. Imbricariinae = Imbricariina, Tr. II, 86.
- ?59. Turbinellidae < Vasidae, Ad. I, 155.

# (Hamiglossa.)

- 60. Turridae = Strigatellacea, Tr. II, 202.
- 61. Olividae Olivacea, Tr. II, 105.
  - a. Olivinae = Dactylina, Tr. II, 107.
  - b. Olivellinae Olivellina, Tr. II, 110.
  - c. Ancillinae = Ancillina, Tr. II, 111.
- 62. Harpidae = Harpacea, Tr. II, 104.

- 63. Ptychatractidae = Ptychatractidae, Stm. A. J. C. 1865, 59. 64. Muricidae
- a. Muricinae = Muricea, Tr. II, 112. = Purpuracea, Tr. II, 124.

b. Purpurinae

69. Pupinidae

# (Atypoglossa.)

= Columbellacea, Tr. II, 97. 65. Columbellidae

# SUB-ORDER TÆNIOGLOSSA.

# GROUP ROSTRIFERA.

- = Pomatiacea, Tr. I, 65. 66. Pomatiidae
- 67. Cyclostomidae = Cyclostomacea, Tr. I, 68. a. Licineinae = Licinea, Pfr. Pneum.
  - b. Cistulinae = Cistulea, Pfr. Pneum.
  - = Cyclostomea, Pfr. Pneum. c. Cyclostominae
- = Cyclotacea, Tr. I, 66. 68. Cyclophoridae
- = Cyclotea, Pfr. Pneum. a. Cyclotinae
- b. Cyclophorinae = Cyclophorea, Pfr. Pneum.
- = Pupinea, Pfr. Pneum. a. Pupininae
  - b. Diplommatininae Diplommatinacea, Pfr. Pneum.
- 70. Aciculidae = Aciculacea, Tr. I, 65.
- 71. Truncatellidae = Truncatellacea, Tr. I, 85.
- 72. Ampullariidae = Ampullariacea, Tr. I, 86.
- 73. Valvatidae = Valvatae, Tr. I, 95.

= Viviparidae, Gill. P. A. N. S. P. 74. Viviparidae 1863, 33. = Lioplaces, Gill, P. A. P. '63. a. Lioplacinae b. Viviparinae = Vivipari, Gill, P. A. P. '63. * 75. Assiminiidae < Assiminiidae, Ad. II, 314. 76. Rissoellidae = Rissoellidae, Ad. I, 325. = Pomatiopsinae, Stm. Hydr. 77. Pomatiopsidae 4, 29–36. < Rissoidae, Stm. Hydr. 3. 78. Rissoidae = Hydrobiinae, Stm. Hydr. 5. a. Amnicolinae = Rissoinae, Stm. Hydr. 5. b. Rissoinae = Rissoininae, Stm. Hydr. 5. c. Rissoininae 79. Skeneidae = Skeneinae, Stm. Hydr. 5. 80. Bythiniidae = Bythiniinae, Stm. Hydr. 5. = Fossari, Tr. I, 153. 81. Fossaridae 82. Littorinidae > Littorinae, Tr. I, 129. a. Lacuninae b. Littorininae ? 83. Pyramidellidae = Pyramidellidae, Ad. I, 228. 84. Eulimidae = Eulimidae, Ad. I, 235. 85. Styliferidae = Styliferidae, Ad. I, 238. 86. Ceriphasiidae = Strepomatidae, Tr'n A. J. C.

1865. 87. Melanopidae = Pachycheili, Tr. I, 113.

88. Melaniidae = rachychem, 1r. 1, 113

- a. Melaniinae = Melaniae, Tr. I, 121. = Thiarae, Tr. I, 112. b. Tiarinae c. Paludominae < Cerithia, Tr. I, 139. 89. Cerithiopsidae < Cerithiacea, Tr. I, 138. 90. Cerithiidae < Cerithia, Tr. I, 139. a. Cerithiinae = Potamides, Tr. I, 145. b. Potamidinae 91. Planaxidae < Planaxes, Tr. I, 149. 92. Caecidae = Caecidae, Cpr. P. Z. S. 1858, 413. 93. Vermetidae < Vermetacea, Mch. P.Z. S. 1861, 1862. 1862.
- 94. Tenagodidae < Vermetacea, Mch. P. Z.S. 1861, 95. Turritellidae = Turritellae, Tr. I, 152.
- 96. Trichotropidae = Trichotropidae, Tr. I, 164. 97. Hipponicidae = Hipponicidae, Tr. I, 162.
- 98. Capulidae < Capulacea, Tr. I, 156. = Calyptræidae, Gray, P.Z.S.'67. 99. Calyptriidae **726.**
- = Neritopsidae, Gray 51. 100. Neritopsidae
- = Onustidae, Tr. I, 190. 101. Onustidae
- 102. Strombidae = Alata, Tr. I, 191. a. Strombinae = Strombinae, Gill, A. J. C.

1870

b. Seraphyinae = Seraphyinae, Gill, A. J. C. 1870.

*

103. Aporrhaidae — Aporrhaidae, Tr. I, 199.

# (Digitiglossa.)

- 104. Pediculariidae = Pediculariacea, Tr. I, 189.
- 105. Amphiperasidae = Amphiperasidae, Tr. I, 216.

#### ROSTRUM WITH INVERTIBLE TIP.

- 106. Cypraeidae = Cypraeacea, Tr. I, 201.
  - a. Cypraeinae
  - b. Pustulariinae
- 107. Triviidae = Triviacea, Tr. I, 214.
  - a. Triviinae
  - b. Eratoinae

#### ¥

- 108. Marseniidae = Marseniidae, Tr. I, 185.
- 109. Velutinidae = Velutinidae, Tr. I, 165.
- 110. Naticidae = Naticacea, Tr. I, 169.

#### GROUP PROBOSCIDIFERA.

- 111. Pyrulidae = Sycotypidae, Tr. I, 238.
- 112. Doliidae Doliacea, Tr. I, 224.
- 113. Cassididae Cassidea, Tr. I, 220.
- 114. Ranellidae = Ranellacea, Tr. I, 227.
- 115. Tritonidae = Tritoniacea, Tr. I, 231.

#### SUB-ORDER PTENOGLOSSA.

- 116. Ianthinidae = Ianthinidae, Gray, Guide, 53.
- 117. Solariidae = Architectonidae, Gray, Guide,

62.

118. Scalariidae = Scalariadae, Gray, Guide, 52.

#### ORDER IV.—HETEROPODA.

- 119. Atlantidae = Atlantacea, Tr. I, 41.
- 120. Carinariidae = Carinariacea, Tr. I, 42.
- 121. Pterotrachaei- = Firolacea, Tr. I, 43.

#### ORDER V.—RHIPHIDOGLOSSA.

#### SUB-ORDER PODOPHTHALMA.

#### (Pseudobranchia.)

- 122. Hydrocaenidae = Hydrocaenacea, Tr. I, 83.
- 123. Stoastomidae = Stoastomidae, Chitty, P. Z. S. 1857, 162.
- 124. Helicinidae = Helicinacea, Tr. I, 75.
- 125. Proserpinidae = Proserpinacea, Tr. I, 84.

#### (Neritacea.)

126. Neritidae = Neritinidae, Gray, 136.

#### (Trochacea.)

- 127. Rotellidae = Rotelladae, Gray, 139.
- 128. Turbinidae = Turbinidae, Gray, 141.
- 129. Liotiidae = Liotiadae, Gray, 146.

130. Trochidae = Trochidae, Gray, 147.

131. Stomatellidae = Stomatellidae, Gray, 158.

#### (Pleurotomariacea?)

132. Pleurotomarii- < Pleurotomaridae, Br. Kef. Th. dae III, 1037.

133. Scissurellidae = Scissurellidae, Gray, 160.

#### (Haliotacea.)

134. Haliotidae = Haliotidae, Gray, 161.

#### (Macluraeacea.)

135. Macluraeidae = Maclureadae, Cpr., Lect. 68.

#### SUB-ORDER DICRANOBRANCHIA.

#### (Fissurellacea.)

136. Fissurellidae < Fissurellidae, Gray, 162.

137. Emarginulidae < Fissurellidae, Gray, 162.

?

# (Bellerophontacea.)

138. Bellerophontidae = Bellerophontidae, Meek, P. C. A. S., I, 9.

#### ORDER VI.—DOCOGLOSSA.

# Sub-Order Proteobranchia.

139. Acmaeidae = Acmaeidae, Dall, A. J. C. 1870.

140. Patellidae = Patellidae, Dall, A. J. C. 1870.

163. Ancylidae = Ancylidae, Dall, A. L. N. Y. IX, 354, 1870.

164. Limnaeidae = Limnaeidae, Dall, A.L. N.Y. IX, 348, 1870.

*

165. Otinidae = Otininae, Ad. I, 249.

166. Auriculidae = Ellobiinae, Ad. I, 236.

# (Petrophila.)

167. Siphonariidae = Siphonariidae, Dall, A. J. C. 1870, 8.

168. Gadiniidae = Gadiniidae, Dall, A. J. C. 1870, 30.

#### (Thalassophila.)

169. Amphibolidae = Amphibolidae, Ad. II, 268.

# SUB-CLASS OPISTHOBRANCHIATA.

# ORDER IX.—TECTIBRANCHIATA.

#### A

170. Philinidae < Philinidae, Gray, 191.

*

171. Amphyspiridae = Amphyspiradae, Gray, 194.

*

172. Ringiculidae = Ringiculidae, Meek, C. L. I. F. N. A., Cret., 16, 34.

173. Actaeonidae < Actaeonidae, Meek, Sill. J. XXXV, 84.

174. Actaeonellidae < Actaeonidae, Meek, Sill. J. XXXV, 84. 175. Cylichnidae = Bullinadae, Gray, 195. = Bullidae, Gray, 196. 176. Bullidae = Amplustridae, Gray, 197. 177. Amplustridae 178. Lophocercidae = Lophocercidae, Gray, 201. 179. Aplysiidae = Aplysiadae, Gray, 198. 180. Runcinidae = Runcinadae, Gray, 204. = Tylodinadae, Gray, 203. 181. Tylodinidae 182. Umprellidae = Umbrelladae, Gray, 204. 183. Pleurobranchiidae = Pleurobranchidae, Gray, 201. ORDER X.—NUDIBRANCHIATA. SUB-ORDER PYGOBRANCHIA. 184. Doridopsidae = Doridopsidae, A. & H., T. Z. S. 1864, 124. = Dorididae, Gray, 208. 185. Dorididae 186. Onchidorididae — Onchidoridae, Gray, 206. 187. Goniodorididae = Goniodoridae, Gray, 211. 188. Polyceridae < Polyceradae, Gray, 213.

> Triopidae, Gray, 214.

190. Ceratosomidae = Ceratosomidae, Gray, 215.

189. Triopidae

#### SUB-ORDER POLYBRANCHIA.

#### (Inferobranchia.)

- 191. Phyllidiidae = Phyllidiadae, Gray, 216.
- 192. Diphyllidiidae = Diphyllidiadae, Gray, 216.

# (Polybranchia.)

- 193. Tritoniidae = Tritoniadae, Gray, 217.
- 194. Scyllaeidae = Scyllaeidae, Gray, 218.

#### (Ceratobranchia.)

#### (Section 1.)

#### (A.)

- 195. Dendronotidae = Dendronotidae, Gray, 219.
- 196. Heroidae = Heroidae, Gray, 221.
- 197. Tethyidae = Tethyadae, Gray, 219.
- 198. Dotoidae = Dotonidae, Gray, 222.
- 199. Proctonotidae = Proctonotidae, Gray, 220.
- 200. Glaucidae = Glaucidae, Gray, 222.

(B.)201. Eolididae = Eolididae, Gray, 223.

# (Section 2.)

- 202. Fionidae = Fionidae, Gray, 227.
- 203. Hermaeidae = Hermaeidae, Gray, 227.

#### Sub-Order Pellibranchiata.

## (Tribe 1.)

- 204. Elysiidae = Elysiadae, Gray, 228.
- 205. Limapontiidae = Limapontiadae, Gray, 229.

## (Tribe 2.)

206. Phyllirhoidae = Phyllirhoidae, Gray, 230.

#### SUB-ORDER ENTOCONCHACEA.

207. Entoconchidae = Heterosalpinx, Baur, N. A. A. L. C. XXXI.

#### SUB-CLASS PTEROPODA.

#### ORDER XI.—THECOSOMATA.

208. Limacinidae = Limacinacea, Tr. I, 50.

209. Hyalidae = Hyalacea, Tr. I, 50.

210. Cymbuliidae — Cymbuliacea, Tr. I, 53.

211. Conulariidae = Conulariidae, Br. Th. III, 645.

212. Hyolithidae = Thecidae, Br. Th. III, 646.

#### ORDER XII.—GYMNOSOMATA

*

214. Clionidae = Clionacea, Tr. I, 54.

215. Pneumodermonidae = Pneumodermacea, Tr. I, 56.

216. Cymodoceidae = Pterocymodoceidae, Br. Th. III, 645.

#### SUB-CLASS PROSOPOCEPHALA.

## ORDER XIII.—SOLENOCONCHÆ.

217. Dentaliidae = Dentaliidae, Br. Th. III, 523.

# CLASS C.—CONCHIFERA.

## ORDER XIV.—DIMYARIA.

	(Pholadacea.)
218. Aspergillidae	< Gastrochaenidae, Tryon, P. A. N. S. P., 1861, 465.
219. Gastrochaenida	e < Gastrochaenidae, Tryon, P. A. N. S. P., 1861, 465.
220. Teredinidae	= Teredidae, Tryon, P. A. N. S. P., 1862, 453.
221. Pholadidae	= Pholadidae, Tryon, P. A. N. S. P., 1862, 191.
	(Solenacea.)
222. Solenidae	< Solénacées, Desh. 1860, 143.
223. Solecurtidae	< Solénacées, Desh. 1860, 143.

# (Myacea.)

224. Saxicavidae	= Glycimérides, Desh. 1860, 165.
225. Myidae	< Myaires, Desh. 1860, 182.
226. Corbulidae	< Myaires, Desh. 1860, 182.
227. Pandoridae	= Pandoridae, Desh. 1860, 238.
228. Anatinidae	< Osteodesmidae, Desh. 1860,
	245.
229. Myochamidae	= Myochamidae, Cpr. Lect. 103.

*

230.	Pholadomyidae	= Pholadomyadae,	Desh.	1860,
		270.		

## (Veneracea.)

- 231. Mactridae < Mactracea, Desh. 1860, 281.
- 232. Mesodesmidae = Mésodesmides, Desh. 1860, 297.
- 233. Amphidesmidae = Amphidesmidae, Desh. 1860, 297.
- 234. Tellinidae = Tellinidae, Desh. 1860, 314.
- 235. Psammobiidae = Psammobidae, Desh. 1860, 364.
- 236. Donacidae = Donacidae, Desh. 1860, 387.
- 237. Petricolidae = Lithophaga, Desh. 1860, 400.
- 238. Veneridae < Conchae, Desh. 1860, 407.
- 239. Glauconomidae = Glauconomyadae, Ad. II, 442.

# (Corbiculacea.)

- 240. Cyrenidae = Cycladae, Gray, Turton, 250.
- 241. Pisidiidae = Pisidiidae, Gray, Turton, 263.
- 242. Cyrenoididae = Cyrenoididae, Ad. II, 452.

#### (Dreissenacea.)

243. Dreissenidae = Dreissenidae, Ad. II, 52.

# (Cardiacea.)

- 244. Veniliidae = Cyprinidae, Ad. II, 443.
- 245. Glossidae < Bucardiidae Ad. II, 460.

246. Cardiidae	< Cardiacea, Desh. 1860, 527.
247. Adacnidae	< Cardiacea, Desh. 1860, 527.
	(Chamacea.)
040 Chamila	,
248. Chamidae	= Chamacea, Desh. 1860, 577.
	(Lucinacea.)
249. Lucinidae	< Lucinidae, Desh. 1860, 588.
250. Ungulinidae	< Ungulinidae, Ad. II, 470.
251. Erycinidae	< Laseidae, Ad. II, 473.
252. Cyamiidae	< Laseidae, Ad. II, 473.
253. Leptonidae	< Leptonidae, Ad. II, 477.
254. Galeommidae	< Galeommidae, Ad. II, 479.
	(Solemyacea.)
OKK Colomoridos	,
255. Solemyidae	= Solemyadae, Desh. 1860, 728.
	(Carditacea.)
256. Crassatellidae	= Crassatellidae, Desh. 1860,
	— Classatelliade, Desi. 1000,
	733.
257. Carditidae	,
257. Carditidae	733.
257. Carditidae 258. Unionidae	733. = Carditae, Desh. 1860, 751. (Naiades.)
	733.  = Carditae, Desh. 1860, 751.  (Naiades.)  < Unionidae, Ad. II, 489.
258. Unionidae 259. Iridinidae	733.  = Carditae, Desh. 1860, 751.  (Naiades.)  < Unionidae, Ad. II, 489.  = Mutelidae, Ad. II, 505.
258. Unionidae 259. Iridinidae	733.  = Carditae, Desh. 1860, 751.  (Naiades.)  < Unionidae, Ad. II, 489.

# (Muelleracea.)

261. Ætheriidae < Ætheriidae, Ad. II, 509.

·262. Muelleriidae < Ætheriidae, Ad. II, 509.

## (Trigoniacea.)

263. Trigoniidae = Trigonea, Desh. 1860, 805.

# (Arcacea.)

264. Nuculidae = Nuculidae, Ad. II, 544. 265. Ledidae = Ledidae, Ad. II, 546.

266. Arcidae = Arcacea, Desh. 1860, 832.

#### ORDER XV.—METARRHIPTAE.

267. Tridacnidae = Tridacnides, Vaill, A. S. N., IV, 1865, 64.

#### ORDER XVI.—HETEROMYARIA.

268. Mytilidae = Mytilidae, Ad. II, 511.

#### ORDER XVII.—MONOMYARIA.

#### (Aviculacea.)

269. Pinnidae = Pinnidae, Meek, Sill. J. XXXVII, 212.

270. Pteriidae = Pteriidae, Meek, Sill. J. XXXVII, 212.

271. Vulsellidae = Vulsellidae, Ad. II, 523.

#### (Pectinacea.)

272. Spondylidae = Spondylidae, Ad. II, 559.

273. Limidae

282. Caprinidae

283. Caprotinidae

= Radulidae, Ad. II, 556. 274. Pectinidae = Pectinidae, Ad. II, 550. (Anomiacea.) 275. Placunidae = Placunidae, Carp. Lect. 123. 276. Anomiidae = Anomiadae, Carp. Lect. 123. (Ostracea.) 277. Ostreidae = Ostracea, Ad. II, 567. 278. Eligmidae = Elignus, Eudes Desl. M. L. S. N., X, 272, ? Order XVIII.—RUDISTA. 279. Hippuritidae < Hippuritidae, Woodw. Man. 1866, 440. < Hippuritidae, Woodw. 280. Radiolitidae 1866, 440. 281. Caprinellidae < Hippuritidae, Woodw. Man. 1866, 440.

< Hippuritidae, Woodw. Man.

< Hippuritidae, Woodw. Man.

1866, 440.

1866, 440.

#### (SUB-BRANCH MOLLUSCOIDEA.)

## CLASS D.—TUNICATA.

#### ORDER XIX.—SACCOBRANCHIA.

## (Solitaria.)

284. Pelonaeidae = Pelonaeidae, Br. III, 216. 285. Chelyosomidae < Ascidiadae, Br. III, 218. 286. Ascidiidae < Ascidiadae, Br. III, 218. 287. Bolteniidae < Ascidiadae, Br. III, 218.

287^a Rhodosomidae = Rhodosoma, Crosse, J. C. XV, 1877, 101.

# (Sociales.)

#### (S. Perophoracea.)

288. Perophoridae < Clavellinidae, Br. III, 217.

# (S. Clavellinacea.)

289. Clavellinidae < Clavellinidae, Br. III, 217.

#### (Aggregata.)

290. Sigillinidae < Didemninae, Br. III, 217. 290^a. Didemnidae < Didemninae, Br. III, 217. 291. Leptoclinidae < Didemninae, Br. III, 217. *

292. Polyclinidae < Polyclininae, Br. III, 217.

293. Synoeciidae < Polyclininae, Br. III, 217.

*

294. Botryllidae = Botryllidae, Br. III, 217.

#### ORDER XX.—DACTYLOBRANCHIA.

295. Pyrosomidae = Pyrosomatidae, Br. III, 216.

#### ORDER XXI.—TAENIOBRANCHIA.

296. Doliolidae = Doliolidae, Br. III, 216.

*

297. Salpidae == Salpidae, Br. III, 216.

#### ORDER XXII.—LARVALIA.

298. Appendiculariadae, Br. III, riidae 216.

# CLASS E.—BRACHIOPODA.

#### ORDER XXIII.—ARTHROPOMATA.

(Ancylopoda.)

299. Terebratulidae < Terebratulidae, Dav. Int. 61. a. Terebratuli- = Terebratulinae, Dall, A. J.

nae C. 1870.

b. Stringocepha- = Stringocephalinae, Dall, A. linae J. C. 1870.

c. Magasinae = Magasinae, Dall, A. J. C. 1870.

d. Kraussininae = Kraussininae, Dall, A. J. C. 1870.

e. Platidiinae = Platidiinae, Dall, A. J. C. 1870.

f. Megathyrinae = Megathyrinae, Dall, A. J. 1870.

300. Thecidiidae = Thecideidae, Dav. Int. 76.

# (Helictopoda.)

301. Spiriferidae < Spiriferidae, Dav. Int. 79.

302. Atrypidae < Spiriferidae, Dav. Int. 90.

303. Koninckinidae = Koninckinidae, Dav. Int. 92.

304. Rhynchonellidae Rhynchonellidae, Dav. Int. 93.

a. Pentamerinae

b. Rhynchonellinae 305. Strophomenidae = Strophomenidae, Dav. M. L. S. N., X, 191.

a. Poramboniti-

nae = Porambonitidae, Dav. Int. 99.

b. Strophomeni-

nae = Strophomenidae, Dav. Int. 101.

c. Davidsoninae = Davidsonidae, Dav. Int. 109.

306. Productidae = Productidae, Dav. Int. 112.

#### ORDER XXIV.—LYOPOMATA.

307. Craniidae = Craniadae, Dav. Int. 123.

308. Discinidae = Discinidae, Dav. Int. 125.

309. Lingulidae = Lingulidae, Dall. A. J. C. VI, 1870.

a. Lingulinae = Lingulinae, Dall. A. J. C. VI, 1870.

b. Obolinae = Obolinae, Dall, A. J. C. VI, 1870.

# CLASS F.—POLYZOA.

#### ORDER XXV.—PHYLACTOLÆMATA.

#### SUB-ORDER LOPHOPODIA.

- 310. Pectinatellidae = Pectinatellidae, Hyatt, P. E. I. 1864-66.
- 311. Cristatellidae = Cristatellidae, Hyatt, P. E. I. 1864-66.
- 312. Plumatellidae = Plumatellidae, Hyatt, P. E. I. 1864-66.

#### SUB-ORDER PEDICELLINEA.

313. Pedicellinidae = Pedicellinidae, Bronn, III, 86.

#### ORDER XXVI.—GYMNOLÆMATA.

SUB-ORDER URNATELLEA.

314. Urnatellidae = Urnatellidae, Bronn, III, 86.

## SUB-ORDER PALUDICELLEA.

315. Paludicellidae = Paludicellidae, Bronn, III, 86.

#### SUB-ORDER CHILOSTOMATA.

(Incrustata or Rigida.)

- 316. Selenariidae = Selenariadae, Bronn, III, 86.
- 317. Steginoporidae = Steginoporidae, Bronn, III, 86.

- 318. Eschariporidae = Eschariporidae, Bronn, III, 86.
- 319. Porellinidae = Porellinidae, Bronn, III, 86.
- 320. Porellidae = Porellidae, Bronn, III, 86.
- 321. Escharellidae = Escharellidae, Bronn, HI, 86.
- 322. Escharellinidae = Escharellinidae, Bronn, III, 86.
- 323. Porinidae = Porinidae, Bronn, III, 86.
- 324. Escharinellidae = Escharinellidae, Bronn, III, 85.
- 325. Escharidae = Escharidae, Bronn, III, 85.
- 326. Flustrinidae = Flustrinidae, Bronn, III, 85.
- 327. Flustrellidae = Flustrellidae, Bronn, III, 85.
- 328. Flustrellariidae = Flustrellariadae, Bronn, III, 85.
- 329. Hippothoidae = Hippothoidae, Bronn, III, 84.

#### (Radicellata.)

#### (Radicellata flexilia.)

- 330. Gemellariidae = Gemellariadae, Bronn, III, 84.
- 331. Farciminariidae = Farciminariadae, Bronn, III, 84.
- 332. Flustridae = Flustridae, Bronn, III, 84.
- 333. Bicellariidae = Bicellariadae, Bronn, III, 84.
- 334. Electrinidae = Electrinidae, Bronn, III, 84.
- 335. Scrupariidae = Scrupariadae, Bronn, III, 83.

# (Radicellata articulata.)

- 336. Salicornariidae = Salicornariadae, Bronn, III, 83.
- 337. Cellulariidae Cellulariadae, Bronn, III, 83.
- 338. Catenicellidae = Catenicellidae, Bronn, III, 83.

#### SUB-ORDER CTENOSTOMATA.

- 339. Hislopiidae = Hislopiadae, Bronn, III, 83.
- 340. Alcyonididae = Alcyonidiadae, Bronn, III, 83.
- 341. Vesiculariidae Vesiculariadae, Bronn, III, 83.

#### SUB-ORDER CYCLOSTOMATA.

#### (Articulata.)

342. Crisiidae — Crisiadae, Bronn, III, 82.

#### (Inarticulata.)

## (Inarticulata operculata.)

- 343. Eleidae = Eleidae, Bronn, III, 82.
- 344. Myriozoidae = Myriozoidae, Bronn, III, 82.

## $(Inarticulata\ fasciculata.)$

- 345. Fascigeridae = Fascigeridae, Bronn, III, 82.
- 346. Fasciporidae = Fasciporidae, Bronn, III, 81.

# (Inarticulata tubulata.)

- 347. Tubigeridae = Tubigeridae, Bronn, III, 81.
- 348. Sparsidae = Sparsidae, Bronn, III, 80.
- 349. Clausidae = Clausidae, Bronn, III, 80.
- 350. Crisinidae = Crisinidae, Bronn, III, 80.
- 351. Caveidae = Caveidae, Bronn, III, 79.

# $(Inarticulata\ for amin at a.)$

- 352. Ceidae = Ceidae, Bronn, III, 79.
- 353. Cavidae = Cavidae, Bronn, III, 79.
- 354. Cytidae = Cytidae, Bronn, III, 79.
- 355. Crescidae = Crescidae, Bronn, III, 79.

# ORDER XXVII?—RHABDOPLEURAE.

356. Rhabdopleuri- = Rhabdopleura, Allm. Q. J. M. dae S., IX, n. s., 57.

# LIST OF AUTHORS REFERRED TO.

The following enumeration of works is chiefly intended to explain the abbreviations used in connection with the preceding list of families, and as the works most accessible to students generally have been used, whenever they could be referred to in explanation of the limits of families adopted, titles of the most elaborate and valuable monographs and catalogues of families and other groups have been entirely omitted, although the compiler has been fortunate enough to be enabled to make use of them. Special monographs have only been referred to when the groups in connection with which they are cited have not been limited in the same manner in general works.

In order, however, to facilitate the use of the list, as well as reference to the series in question, Mr. Lovell Reeve's "Conchologia iconica" has been catalogued, and all the monographs hitherto published enumerated, with references to the families to which the respective genera belong in the present system.

For the information of students, and because it is information often desired, the publishers' prices of most of the works cited are given, in the currency of the country where they were published. Many of the separate monographs reprinted from journals can be obtained from the second-hand book dealers—especially the German—and from the Naturalists' Agency of Salem, Mass., but at varying prices.

In order to secure uniformity of typography, only the initial letters of the characteristic words are capital, the example of the learned brothers Grimm, as well as other German writers, sanctioning such usage for their language. The punctuation of the respective title-pages is adopted.

- ADAMS (Henry and Arthur). The genera of recent Mollusca; arranged according to their organization. . . . . In three volumes. . . . . Vol. I. [-] III. London: John Van Voorst, . . . . 1858. [8vo., V. I, 484 pp.; V. II, 2 p. l. 661 pp.; Atlas, 3 p. l. 138 pl. w. 138 l. opposite. Published in 86 parts, 1st Jan. 1858—1st Nov. 1858, at 2 sh. 6 d., plain; 5 sh., animals colored, per part.]
- ALBERS (Johann Christian). Die Heliceen nach natürlicher verwandtschaft systematisch geordnet von Joh. Christ. Albers, . . . Zweite ausgabe nach dem hinterlassenen manuskript besorgt von Eduard von Martens. Leipzig, Verlag von Wilhelm Engelmann. 1860. [8vo., xviii. 859 pp.—8 th. 7½ ngr.]
- ALDER (Joshua) and Albany HANCOCK. A monograph of the British Nudibranchiate mollusca: with figures of all the species. . . . London: Printed for the Ray Society, 1845. [Imp. 4to., 5 p. l. 54 pp. 138 l., xl pp. 1 l., 83 pl. Published in parts, 1845–55.]

[The arrangement of the Nudibranchiata is mostly adopted from Alder and Hancock (op. cit. pp. xiv.—xxiv.). In place, however, of the single family (81)

- Dorididae, two (185, 186) are adopted; four (187, 188, 189, 190) instead of the Polyceridae, and two (195, 196) disintegrated from the Heroidae.]
- ALDER (Joshua) and Albany HANCOCK. Notice of a collection of Nudibranchiate mollusca made in India by Walter Elliott, Esq., with descriptions of several new genera and species. (1863.) < Transactions of the Zoological Society of London, V, 1866, 113-147, pl. 28-33.
- **ALLMAN** (George James). On Rhabdopleura, a new form of polyzoa, from deep-sea dredging in Shetland. < Quarterly Journal of Microscopical-Science: [etc.], IX, n. s., 1869, 57—63, pl. 8.
- AMERICAN Journal of Conchology. Volume I. [—] II. Edited by George W. Tryon, Jr., 625 Market Street. 1865 [—] 1866. [Published quarterly, at \$3 per number, or \$10 per year.]
- ——The same. Volume III. [—] V. Published by the Conchological section of the Academy of Natural Sciences. • . Philadelphia: Conchological section of the Academy of Natural Sciences. • . 1867 [—] 1870. [Published at \$10 per annum, payable in advance.]
- BARRANDE (Joachim). Caractères distinctifs des Nautilides, Goniatides et Ammonides.—Établissement du genre Nothoceras, · · · . < Bulletin de la Société géologique de France. 2° série. XIII, 872-389, pl. 11—12, 1856.

[The genera enumerated in this article are co-equal with and arranged in the same sequence as the families of Goniatitoidea and Ammonitoidea, which are equivalent to the families Nautilides and Goniatides of Barrande.]

- Système silurien du centre de la Bohême . . . 1ère partie : Recherches paléontologiques. Vol. II. Texte. Classe des mollusques. Ordre des Céphalopodes. 1867. Chez l'auteur et éditeur | à Prague . . . à Paris, . . . [4to., xxxvi, 712 pp.—40 fr.]
- The same. [Atlas.] 1ère partie: Recherches paléontologiques. Vol. II. Céphalopodes. [1ère—8me série, as below.] 1865 [-] 1868. Chez l'auteur et éditeur | à Prague, . . . à Paris, . . . . [4to.]

1ère série: Planches 1 à 107. 1865. [100 fr.] 2me série: Planches 105 à 244. 1866. [125 fr.]

- 8me série: Planches 245 à 850. 1868. [140 fr.]
- BAUR (Albert). Beiträge zur naturgeschichte der Synapta digitata. Dritte abhandlung: Die eingeweideschnecke (Helicosyrinx parasita) in der leibeshöhle der Synapta digitata. • • Dresden. Druck von E. Blochmann & sohn. 1864. [4to., 2 p. l. 119 pp. pl. vl.—viii.] < Novorum Actorum Academiæ Cæsareæ Leopoldino-Carolinæ naturæ curiosorum XXXI. 1864.
- BRONN (Heinrich Georg). Die klassen und ordnungen des Thierreichs, wissenschaftlich dargestellt in wort und bild . . . Dritter band. Malacozoa . . . Leipzig und Heidelberg. C. F. Winter'sche verlagshandlung, 1863-66. [Published in 48 parts, 8vo., 1862-66, at \frac{1}{2} th. per part, and bound in 2 vols., with double titles, general and special, viz:]
  - III, 1. Die klassen und ordnungen der Weichthiere (Malacozoa), wissenschaftlich dargestellt in wort und bild. Von Dr. H. G. Bronn, . . . . Dritten band erste abtheilung. Kopflose Weichthiere (Malacozoa Acephala). . . . . [3 titles, pp. 1-518, pl. 44, w. 44 opp. expl. l. 1862.]

- III, 2. Dr. H. G. Bronn's klassen und ordnungen der Weichthiere (Malacozoa), wissenschaftlich dargestellt in wort und bild. Fortgesetzt von Wilhelm Keferstein, M. D. . . . Dritten bandes zweite abtheilung. Kopftragende Weichthiere (Malacozoa Cephalophora). . . . [2 titles, pp. 521-1500, pl. 45-136, w. 92 opp. expl. l. 1862-66.]
- CARPENTER (Philip P...). First steps towards a monograph of the Cæcidæ, a family of rostriferous gasteropoda. < Proceedings of the Zoological Society of London. Part XXVI, 1858, 413—444.
- Lectures on Mollusca; or, "shell-fish" and their allies. Prepared for the Smithsonian Institution, by Philip P. Carpenter, B. A., Ph. D., of Warrington, England. < Annual report of the board of regents of the Smithsonian Institution, . . . for . . . 1860, 1861, 151—283.</li>

[Reprinted, with index, 140 pp., Washington, 1860.]

- CHENU (Jean Charles). Manuel de conchyliologie et de paléontologie conchyliologique par le Dr. J. C. Chenu . . . . Paris | Librairie Victor Masson . . . . 1859 [-] 62. [8vo., 2 v. I, 2 p. l. vii, 508 pp.; II, 3 p. l. 327 pp. Published in 3 parts, 1859-61 @ 12.50 + 12.50 + 20 = 45 fr.; reduced now to 32 fr.]
- CHITTY (Edward). On Stoastomidæ as a family, and on seven proposed new genera, sixty-one new species, and two new varieties from Jamaica. < Proceedings of the Zoological Society of London, Part XXV, 1857, pp. 162—201.
- CROSSE (H···). Note sur un genre [Rhodosoma] intermédiare entre les ascidiens et les mollusques lamellibranches. < Journal de conchyliologie, v. XV (3e série, t. VII), 1867, 101—107.</p>
- CROSSE (H···) and Paul FISCHER. Étude sur la mâchoire et l'armature linguale des Cylindrellidæ et des quelques genres voisins sous la rapport conchyliologique.
  Journal de conchyliologie, v. XVIII (8° série. t. X), 1870, 5—27, pl. 3—5.
- —— Materials toward a monograph of the Gadiniides. <Ib. VI, 8—22, pl. 2 and 4, fig. 1—3, 12—13. 1870.
- —— Remarks on the anatomy of the genus Siphonaria, with a description of a new species. <Ib. VI, 30—41, pl. 4—5. 1870.
- On the genus Pompholyx and its allies, with a revision of the Limnæidæ of authors. <Annals of the Lyceum of Natural History of New York. IX, 333—361; Pl. ii. 1870.
- A revision of the Terebratulids and Lingulids, with remarks on, and descriptions of, some recent forms. < American Journal of Conchology. VI. 88—168, pl. 6, 7, and 8. 1870.
- On the limpets; with special reference to the species of the west coast of America, and to a more natural classification of the group. <Ib. VI, 1870. (In press.)
- DAVIDSON (Thomas). British fossil Brachiopoda. By Thomas Davidson, Esq., F.G.S., · · · . Vol. I. With a general introduction: I. On the anatomy of Terebratula. By Professor Owen, · · · . II. On the intimate structure of 3

- the shells of the Brachiopoda. By Professor Carpenter, .... III. On the classification of the Brachiopoda. By Thomas Davidson, .... London: Printed for the Palssontographical Society. 1851—1854. [4to. 1 p. l. 136 pp. 9 pl. w. 9 l. expl.]
- DAVIDSON (Thomas). Introduction à l'histoire naturelle des Brachiopodes vivants et fossiles, ou considérations générales sur la classification de ces êtres en familles et en genres; par Thomas Davidson, Esq., . . . Traduit de l'Anglais par M. Eudes-Deslongchamps, . . .; et par M. Eugene Eudes-Deslongchamps, . . . . < Mémoires de la Société linnéene de Normandie. X, 1856, 71—271, pl. 6—14, with 9 l. explan.
  - [A translation of the third part of the preceding work, with modifications by the author.]
- DESHAYES (Gerard Paul). Description des animaux sans vertèbres découverts dans la bassin de Paris pour servir de supplément à la Description des coquilles fossiles des environs de Paris comprenant une revue générale de toutes les espèces actuellement connues, par G. P. Deshayes.—[See "Contents."]—Paris, J. B. Baillière et fils, · · · · 1860 [—] 1866. [50 livr., chaque livr. 5 fr.]
  - Tome premier.—Texte. Mollusques Acéphalés Dimyaires. Accompagné d'un Atlas de 89 planches. • 1860. [2 p. l. 912 pp.]
  - Tome deuxième.—Texte. Mollusques Acéphalés Monomyaires et Brachiopodes. Mollusques Céphalés. Première partie. Accompagné d'un Atlas de 64 planches. (Planches 1 à 64.) · · · 1864. [3 p. l. 968 pp.]
  - Tome troisième.—Texte. Mollusques Céphalés, deuxième partie. Mollusques Céphalopodes. Accompagné d'un Atlas de 42 planches. (Planches 65 à 107.) • 1866. [2 p. l. 667 pp.]
  - Atlas. Tome premier.—(89 planches.) Mollusques Acéphalés. . . . 1860. [2 p. l. [92] pp. [89] pl.]
  - Atlas. Tome deuxième.—(107 planches.) Mollusques Céphalés et Mollusques Céphalopodes. • 1866. [2 p. l. 107 pp. 107 pl.]
  - [This work is cited as containing the latest general revision of the classification of the Conchifera, by one who has perhaps devoted more attention to those animals than any other naturalist.]
- DESLONGCHAMPS (Jacques Armand Eudes). Description d'un nouveau genre de coquilles bivalves fossiles Eligmus, provenant de la grande colithe du département du Calvados; . . . . < Mémoires de la Société linnéene de Normandie. X, 1856, 272—293, pl. 15—16.
- GILL (Theodore Nicholas). Systematic arrangement of the mollusks of the family Viviparidæ, and others, inhabiting the United States. < Proceedings of the Academy of Natural Sciences of Philadelphia, 1863, 33—40.
- On the family Strombidee, and its classification. <American Journal of Conchology. (Not yet published.)
- GRAY (John Edward). Catalogue of the Mollusca in the collection of the British Museum. Part I. Cephalopoda Antepedia. Printed by order of the trustees. London: 1849. [12mo. viii, 164 pp.—4 sh.]

GRAY (John Edward.) A list of the genera of recent Mollusca, their synonyma and types. < Proceedings of the Zoological Society of London. Part XV, 1847, 129—219.</p>

[Republished, with same pagination, and with special title-page, in "Figures of molluscous animals, selected from various authors. Etched for the use of students. By Maria Emma Gray." iv, 1859.]

- On the arrangement of the Land Pulmoniferous mollusca into families.
  The Annals and Magazine of Natural History. VI, Third Series, 1860, 267—269.
- Notes on the specimens of Calyptræidæ in Mr. Cumming's collection. <Proceedings of the scientific meetings of the Zoological Society of London for the year 1867, 726—748.
- HANCOCK (Albany). See Alder (Joshua) and Hancock.
- HUXLEY (Thomas Henry). An introduction to the classification of animals.
  .... London: John Churchill & Sons, .... 1869. [8vo., 4 p. l. 147 pp. 6 sh.]

[Authority for the Tunicate order Larvalia.]

- **HYATT** (Alpheus). Observations on Polyzoa. Suborder Phylactolæmata. < Proceedings of the Essex Institute, IV, V.
  - [Author's separate ed., iv, 103 pp., 15 pl. w. 7 intercalated leaves explanatory.]
- JOURNAL de conchyliologie, comprenant l'étude des animaux, des coquilles vivantes et des coquilles fossiles, publié sous la direction de M. Petit de la Saussaye. Tome premier [—] quatrième. —— À Paris, chez M. Petit de la Saussaye, . . . , 1850 [—] 1858.
- —— Journal de conchyliologie publié sous la direction de MM. Fischer et Bernardi. Tome V [—] VIII. 2° série. Tome I° [—] IV. —— À Paris, chez M. Bernardi, · · · · . Juillet 1856 [—] Janvier 1860.
- Journal de conchyliologie, publié sous la direction de MM. Crosse et Fischer [et Bernardi, 1861—1863].
   8° série. Tome I° [—] Xme. Vol. IX [—] XVIII.
   À Paris, chez M. Crosse, rue Tronchet, 25. 1861 [—] 1870.
   [Prix de l'abonnement: pour France, 16 fr.; pour les pays hors d'Europe, 20 fr.]
- LEA (Jsacc). A synopsis of the family Unionidæ. . . . Fourth edition, very greatly enlarged and improved. Philadelphia: Henry C. Lea. 1870. [4to. xxx pp. + bastard title + 25—184 pp.]
- MACDONALD (John Denis). On the representative relationships of the fixed and free Tunicata, regarded as two subclasses of equivalent value; with some general remarks on their morphology. Transactions of the Royal Society of Edinburgh. XXIII, 1864, 171—183, pl. ix, 1862-63.
- On the anatomy and classification of the Heteropoda. <Ib. XXIII, 1864, 1—20, pl. i—ii, 1861-62.
- MEEK (Fielding Bradford). Remarks on the family Acteonide, with descriptions of some new genera and subgenera. <The American journal of science and arts. Conducted by B. Silliman, B. Silliman, Jr., and James H. Dana [etc.]. Second series, XXXV, 1863, 84—94.

- MEEK (Fielding Bradford). Remarks on the family Pteriidæ (=Aviculidæ) with descriptions of some new fossil genera. <American journal of science and arts. [etc.] Second series, XXXVII, 1864, 212—220.
- Note on the affinities of the Bellerophontidæ. < Proceedings of the Chicago academy of sciences, I, 9—11, 1865.
- ——— Check list of the invertebrate fossils of North America. Cretaceous and Jurassic. By F. B. Meek. —— Washington: Smithsonian Institution. April, 1864. [8vo. 1 p. l. 40 pp.—25 c.] < Smithsonian miscellaneous collections. VII, 1867.
- MÖRCH (Otto A...L...). Review of the Vermetidæ. < Proceedings of the Zoological Society of London for the year 1861, 145—181, pl. 25 (Part I); 826—865 (Part II); 1862, 54—88 (Part III).
- OWEN (Richard). Mollusca. <The Encyclopædia Britannica, . . . XV, 1857, 319—403.

[Authority for the subdivision of Tunicates into Saccobranchiata, Dactylo-branchiata, and Taeniobranchiata.]

- PFEIFFER (Louis). Monographia Pneumonoporum viventium. Sistens descriptiones systematicas et criticas omnium hujus ordinis generum et specierum hodie cognitarum, accedente fossilium enumeratione. . . . . Cassellis. Sumptibus Theodori Fischer. 1852. [etc. 8vo. xviii, 489 pp.—3‡ th.]
- Ibid. II. Supplementum primum. . . . . Cassellis. Sumptibus Theodori Fischer. 1858. [8vo. viii, 249 pp.—2 th.]
- ——— Ibid. III. Supplementum secundum. · · · . —— Cassellis Sumptibus Theodori Fischer. 1865. [8vo. 2 p. l. 284 pp.—2½ th.]
- ----- Catalogue of Phaneropneumona, or terrestrial operculated mollusca, in the collection of the British Museum. Printed by order of the trustees. London, 1852. [12mo. 2 p. l. 324 pp.—5 sh.]
  - [A translation of the Monographia Pneumonoporum viventium (1852), with few modifications, edited by Dr. J. E. Gray.]
- Monographia Auriculaceorum viventium. Sistens descriptiones systematicas et criticas omnium hujus familiae generum et specierum hodie cognitarum, nec non fossilium enumeratione. Accedente Prosipernaceorum nec non generis Truncatellae historia. Cassellis. Sumptibus Theodori Fischer. 1856. [8vo. xiii, 209 pp.—2 th.]
- Catalogue of Auriculidæ, Proserpinidæ, and Truncatellidæ in the collection of the British Museum. London: printed by order of the trustees. 1857. [12mo. 2 p. l. 150 pp.—1 sh. 9 d.]
  - [A translation of the preceding, with slight modifications, edited by Dr. J. E. Gray.]
- PHILADELPHIA (Conchological Section of the Academy of Natural Sciences of). [Catalogue of recent Mollusca. Viz:—]
  - Catalogue of recent Moliusca, belonging to the order Pholadacea. By George W. Tryon, Jr. pp. 1—21. 1868.
  - Catalogue of the family Solenidæ. By T. A. Conrad. pp. 22—29. 1868. Catalogue of the family Mactridæ. By T. A. Conrad. pp. 30—47. 1868.
  - Catalogue of the family Anatinidæ. By T. A. A. Conrad. pp. 49-58. 1869.

Catalogue of the families Saxicavidæ, Myidæ and Corbulidæ. By George W. Tryon, jr. pp. 59-68. 1869.

Catalogue of the family Pandoridæ. By Philip P. Carpenter. pp. 69-71. 1869.

Catalogue of the family Tellinidæ. By George W. Tryon, jr. pp. 72—126. 1869.

Catalogue of the recent species of the family Corbiculads. By Temple Prime. pp. 127—187. 1870.

Catalogues of the families Porcellanidæ [=Cypracidæ+Triviidae—Eratoinæ] and Amphiperasidæ. By S. R. Roberts. pp. 189—214. 1870.

Catalogue of the known species, recent and fossil, of the family Marginellidæ [+ Cystiscidæ + Eratoinæ]. By John H. Redfield. pp. 215—269. 1870.

[Although these catalogues have not actually been referred to in the Arrangement, they are here recorded on account of their usefulness as well as cognate nature.]

See, also, AMERICAN Journal of Conchology.

REEVE (Lovell Augustus). Conchologica iconica; or, illustrations of the shells of Molluscous animals. . . . London: Reeve, brothers, . . . 1843 [-] 1845; Reeve, Benham, and Reeve, . . . 1847 [-] 1849; Reeve and Benham, . . . 1851; Lovell Reeve, . . . 1854 [-] 1860; Lovell Reeve & co., . . . . 1862, [et seq.] [4to., 193 monographs in 17 volumes.]

[The following classified list of the "monographs" is given, in order to serve as an index to the volumes—a desideratum that has not been supplied by the publishers—as well as and more especially to serve as a reference from the best known generic names to the position of the families in the present arrangement, and to give some—although rather inadequate—idea of the numbers of species. It must be understood, however, that many of the "genera" enumerated in the following list are artificial assemblages of species combined on account of agreement in some more or less marked conchological character, and that some genera (e. g. Bulimus, Helix, Lucina, Pyrula, etc.) contain representatives of several widely distinct families. The references in such cases are to the families containing the typical species of such genera.

The monographs were generally published within a year of dates assigned to the volumes in which they were subsequently combined.

٧o	Year	Pi.	£.	6.	đ.	Vol. Year. Pl.		đ.
1	1843	131	8	10	6	10 1858 126 8	4	. 0
2	1843	114	7	9	0	11 1859 126 8	4	. 0
3	1845	130	. 8	9	0	12 1860 131 8	10	6
4	1847	110	. 7	4	0	13 1862 126 8	. 4	0
5	1849	147	. 9	10	6	14 1864 137 8	18	0
6	1851	129	. 8	8	0	15 1866 121 8	. 0	0
7	1854	210	13	15	0	16 1868 127 (	. 5	6
8	1855	153	. 9	18	0	17 1870 123		
۵	1956	110	7	15	R			

The prices of separate monographs range from 1 sh. 6 d. per plate (1—2 pl.) and 1 sh. 4 d. (8—6 pl.) to little more than 1 sh. 8 d., according to the number of plates.]

# CONTENTS.

# CLASS A.—CEPHALOPODA.

Order I .- DIBRANCHIATA.

Monograph of the genus.	Spe	cies.		latês.	Volume.	Family		
Argonauta	•••••	5	•••••	4	12	4		
Order II.—TETRABRANCHIATA.								
Nautilus		5			12	19		
Nauviius	••••••	<i>5</i>	••••••	0	14			
	CLASS B.—	-GAST	ERO	PODA				
	SvB-C	CLASS I	DIOECA	١.				
Order III.—Pectinibranchiata.								
Adamsiella	1	17		2	14	67		
Ampullaria	13	34		28	10	72		
Ancillaria		51		12	15	61		
Anculotus		53		6	12			
Buccinum						56		
Bullia		26			3			
Calyptræa		33			11			
Cancellaria					10			
Cassidaria			••••••		5			
Cassis					5			
Cerithidea		29			15			
Cerithium								
Chondropoma								
Columbella								
Concholepas	• • • • • • • • • • • • • • • • • • • •	2	••••••		14			
Conus								
Crepidula					11			
Crucibulum				7	11	99		
Cyclophorus								
Cyclostoma					13			
Cyclotus		59			14			
Cymbium		18			13			
Сургаа				27				
Delphinula		27			1			
Dolium		15			5			
Eburna		9			5			
Eglisia (With Mesalia)		3		*****	5			
Erato		18			15			
Eulima		48			15			
Pasciolaria		16			4			
Ficula		4			4			
Fusus		91			4			
Halia		1			14			
Harpa		9			1			
Hemisinus		26			12			
Tanthina					11			
Io		21	••••••	3	12	86		

Monograph of the genus.	Species.	Plates.	Volume.	Family.
Lampania		2	15	90
Leiostraca			15	
Leptopoma			13	
Littorina		18	10	82
Mangelia	71	8	3	44
Marginella	159	27	15	51
Melania		59	12	88
Melanopsis	10	3	12	87
Melatoma		3	12	86
Mesalia and Eglisia	33	1	5	95
Meta		1	11	65
Mitra		39	2	54
Monoceros	15	4	3	64
Murex	194	37	3	64
Nassa	196	29	8	57
Natioa	143	30	9	110
Niso	9	1	15	84
Oliva	99	30	6	61
Oniscia	6	1		113
Ovulum	66	14	15	105
Paludina	75	11	14	74
Paludomus	15		14	
Phorus	9			101
Pirens	11	2	12	87
Pleurotoma	369	<b>4</b> 0	1	44
Potamides		1	15	90
Pterogera	10	6	6	102
Pterocyclos	30	5	14	68
Purpura		13	3	64
Pyramidella			15	83
Pyrazus		1	15	90
Pyrula	29	9	4	55
Ranella				
Ricinula				
Rostellaria			6	102
Sigaretus	26			
Solarium			15	
Strombus			6	
Struthiolaria			6	
Telescopium				
Terebellum			14	
Terebra			12	
Triton			2	
Trochita			11	
Turbinella			4	59
Turritella		11		
Tympanotonos			15	
Umbrella			11	
Vertagus			15	
Voluta	40 A1	22		
7 U14.50	UI	##	········ • ·······	02

Order IV.—HETEBOPODA.								
Monograph of the genus.	peci	es.	Plat	es. V	olume.	3	family.	
Carinaria	3		1		. 15		120	
Order	<b>v</b> .–	-Rhipidogl	088	<b>.</b>				
Fissurella								
Haliotis				· •••••••••			134	
Latia (With Navicella)	_		•	•••••		•••••		
Navicella						••••••		
Nerita				•••••				
Neritina						••••••		
Phasianella								
Scutus	-	•••••	_					
Trochus								
Tugalia	-	••••••						
Turbo								
Zisyphinus	65		6		. 14	••••••	130	
		.—Docogio		۱.				
Patella	141		42		8		144	
Order VI	т	-Polyplace	1017	OB 4				
Chiton							1/0	
Chitonellus								
Univonellus	•	•••		***************************************	4		140	
SUB-CL	185	PULMONI	FE	RA.				
Order	VII	I.—Pulmor	TAT	'▲.				
Achatina	129	***************************************	23		5	•••••	150	
Achatinella	45		6		6		149	
Anastoma							150	
Bulimus								
Helix1						•••••		
Partula			_					
Scarabus			-	·				
Simpulopsis		•••••		······				
Siphonaria		•••••		·				
Vitrina	78	•••••	10		. 13	•••••	151	
	SUB-CLASS OPISTHOBRANCHIATA							
Order IX.—Tectibranchiata.								
Akera	-							
Aplustrum	_			***************************************				
Aplysia								
Atys	80	•••••		• • • • • • • • • • • • • • • • • • • •				
Bulla								
Dolabella		•••••		······				
Dolabrifera	_							
Haminea				• • • • • • • • • • • • • • • • • • • •				
Hydatina	_		_	******				
Pleurobranchus	_			l				
Tornatella	22		4	**************	15		115	

Order X.—Nudibranchiata.
No genera monographed.

SUB-CLASS PTEROPODA.
Order XI.—THECOSOMATA.
Order XII.—GYMNOSOMATA.
No genera monographed.

SUB-CLASS PROSOPOCEPHALA.

Order XIII.—Solenoconcha.

No genera monographed.

# · CLASS C.—CONCHIFERA. Order XIV.—DIMYARIA.

Monograph of the genus.	Species.	Plates.	Volume.	Family.
Amphidesma			8	
Anatina			14	
Anodon				
Arca				
Artemis		10	6	238
Aspergillum	19	4	12	218
Capsa		1	10	235
Capsella	16	2	10	236
Cardita	50	9	1	257
Cardium	133	22	12	246
Castalia	13	3	17	259
Chama	55	9	4	248
Chamostrea	1	1	14	248
Circe	49	10	14	238
Corbula	43	5	2	226
Crassatella	19	3	1	256
Cuculissa	3	1	17	266
Cypricardia	13	2	1	246
Cytherea	49	10	14	238
Dione	62	12	14	238
Donax	<b>6</b> 8	9	8	236
Galatea	16	6	16	240
Glauconome	9	1	2	239
Hyria	13	15	17	259
Iridina	5	2	16	259
Isocardia	5	1	2	245
Lucina	69	11	6	249
Lutraria	18	5	8	231
Mactra	125	21	8	231
Meroë	12	3	14	238
Mesodesma	81		8	
Myadora	10	1	2	227
Mycetopus	10	4	16	260
Myochama	4	1 ,	12	229
Pectunculus	52	9	1	266

Monograph of the genus.	Pecles	. Pla	tes V	olume.	Family.		
Pleiodon.				16			
Psammobia				10			
Psammotella				10			
Sanguinolaria				10			
Soletellina	-		4	10	235		
Tapes					-		
Tellina	845 .	5	8	17	. 234		
Thracia	22 .		8	12	. <b>2</b> 28		
Trigonia	4.		1	12	. 263		
Tugonia	6.		1	14	. 225		
Unio	525 .	9	6	16	. <b>2</b> 58		
Venus	. 141 .	2	6	14	. 238		
Ondon	T T	-Metarrhip					
				14			
Hippopus							
Tridacna	у.		8	14	. 201		
Order X	VI	-HETERONYA	RIA.				
Lithodomus	84 .		5	10	. 268		
Modiola	71 .	1	1	10	. 268		
Mytilus	61.	1	1	10	. 268		
0.11	<b></b>	37					
•		Мономул		•			
Anomia				11			
Avicula				10			
Crenatula				11			
Hemipeoten				6			
Hinnites				8			
Malleus				11			
Pecten					•		
Pedum				11			
Perna				11			
,				11			
Placunanomia				9			
Vulsella				11			
				11			
		II.—Rudist					
No g	enera	monographe	<b>d.</b>				
Sub-Bro	nch	Mollusco	DIDEA.				
CLASS D.—TUNICATA.							
Order X	IX	SACCOBRANC	HIA.				
		ACTYLOBRAN					
Order XXI.—Tæniobranchia.							
Order XXII.—Larvalia.							
No g	enera	monographe	a.				
CLASS E	.—B	RACHIOP	ODA.				

#### Order XXIV .- LYOPOMATA.

Monograph of the genus.	Species.	Plates.	Volume.	Family.
Crania	. 4	1	13	307
Lingula	. 11	2	13	309
Orbicula	7	1	13	308

- STEBNSTRUP (Japetus Smith). Overblik over de i Kjöbenhavns museer opbevarede Blæksprutter fra det aabne hav (1860-61). [Cranchiæformes.] < Oversigt over det Kgl. danske viderskabernes selskabs forhandlinger og dets medlemmers arbeider i aaret 1861, 69—86.
- **STIMPSON** (William). On certain genera and families of Zoophagous Gasteropods. < American Journal of Conchology. I, 55—64, pl. 8, 9. 1865.
- —— Researches upon the Hydrobiins and allied forms; chiefly made upon materials in the museum of the Smithsonian Institution. By Dr. William Stimpson. Washington: Smithsonian Institution. August, 1865. [8vo. 2 p. l. 59 pp.—50 c.] < Smithsonian miscellaneous collections. VII.
- TROSCHEL (Franz Hermann). Das gebiss der Schnecken zur begründung einer natürlichen classification untersucht von Dr. F. H. Troschel, . . . . Erster band. Mit zwanzig kupfertafeln von Hugo Troschel. ——Berlin. Nicolaische verlagsbuchhandlung. (G. Parthey.) 1856—1863. [4to. viii, 252 pp. 20 pl. and 20 l. explan. opposite. Published in 5 parts, lief. 1—4, each 2 th. 20 ngr.; lief. 5, 3 th.; complete, 13\frac{2}{3} th. Zweiten bandes erste [—] dritte lieferung. pp. 1-132, pl. 1-12, 1866—1869; lief. 1—3, each 3 th.]
- TRYON (George Washington, jr.). Synopsis of the recent species of Gastrochænidæ [including Brechitidæ], a family of acephalous mollusca. < Proceedings of the Academy of Natural Sciences of Philadelphia. 1861, 465—494.
- On the classification and synonymy of the recent species of Pholadidæ. <Ib. 1862, 191—221.
- Monograph of the family Teredidæ. <Ib. 1862, 453-482.
- ——— Observations on the family Strepomatidæ [=Ceraphasiidæ]. <American Journal of Conchology. I, 1865, 93—135.
- Monograph of the family Strepomatids. < Ib. I, 1865, 299—841; II, 1866, 14—52, 115—133.
- TURTON (William). Manual of the land and fresh-water shells of the British islands. With figures of each of the kinds. By William Turton, M. D. New edition, with additions, by John Edward Gray, . . . London: Longman, Brown, Green, Longmans, and Roberts. 1857. (12mo. XVI, 335 pp. 12 pl.)
- VAILLANT (Leon). Recherches sur la famille des Tridacnides. <Annales des Sciences Naturelles. Cinquième série. Zoologie et paléontologie. IV, 64—172, pl. 8—12, 1865.
- WOODWARD (Samuel P···). A manual of the Mollusca; or, a rudimentary treatise of recent and fossil shells. By S. P. Woodward, A.L.S. ··· Illustrated by A. N. Waterhouse and Joseph Wilson Lowry. London: John Weale, ···, MDCCCLI—VI. [12mo. xvi, 486 pp. 1 front. 24 pl. with 12 intercalated leaves explanatory, 1 map.—6 sh. 6 d.—Originally issued in three parts.]

- woodward (Samuel P...). A manual of the Mollusca: a treatise on recent and fossil shells. By the late S. P. Woodward, A.L.S. [etc.]. With numerous illustrations by A. N. Waterhouse and J. W. Lowry. Second edition. London: Virtue brothers & co., ... 1866. [12mo. xiv, 518 pp. 1 front. 23 pl. with 12 l. explanatory, 1 map.—5 sh. 6 d.]
- Appendix to the Manual of the Mollusca of S. P. Woodward, A.L.S., containing such recent and fossil shells as are not mentioned in the second edition of that work. By Ralph Tate, ... London: Virtue & co., ... 1868. [12mo. 86 pp.—1 sh.]

# INDEX TO ARRANGEMENT OF MOLLUSKS.

Abranchia, p. 12.
Aciculacea, 70.
Aciculidae, 70.
Acmaeidae, 139.
Actaeonellidae, 174.
Actaeonidae, 173, 174.
Adaonidae, 247. Admetaces, 49. Admetidae, 49. Ætheriidae, 261, 262. Aggregata, p. 23. Agnatha, p. 12. Alata, 102. Alcyonidiadae, 340. Alcyonidiidae, 340. Ammonitidae, 33. Ammonites, 33. Ammonitoides, p. S. Amnicolinae, 78a. Amoriana, 52. Amphibolidae, 169. Amphidesmidae, 238. Amphiperasidae, 105. Amphyspiradae, 171. Amphyspiridae, 171. Amplustridae, 177. Ampullariacea, 72. Ampullariidae, 72. Anatinidae, 228. Ancillina, 61. Ancillinae, 61c. Ancylidae, 163. Ancyloceras, 36. Ancyloceratidae, 86. Ancylopeda, p. 25. Anomiacea, p. 22. Anomiadae, 276. Anomiidae, 276. Aphragmites, 27. Aplysiadae, 179. Aplysiidae, 179. Aporrhaidae, 103 Appendiculariadae, 298. Appendiculariidae, 298. Arcacea, p. 21. Arcacea, 266. Architectonidae, 117. Arcidae, 266. Argonautidae, 4 Arionidae, 156. Arthropomata, p. 25.

Articulata, p. 29.
Ascidiadae, 285, 286, 287.
Ascidiadae, 286.
Ascoceras, 27.
Aspergillidae, 218.
Assiminidae, 75.
Atlantacea, 119.
Atlantidae, 119.
Atrypidae, 302.
Atypoglossa, p. 6.
Auriculidae, 166.
Aviculacea, p. 21.

Bactrites, 30.
Baculina, 42.
Baculinidae, 42.
Baculidae, 41.
Baculitidae, 41.
Baculitidae, 41.
Baculitidae, 41.
Bathmoeras, 17.
Bathmoeratidae, 17.
Belemitidae, 15.
Bellerophontacea, p. 11.
Bellerophontacea, p. 11.
Bellerophontacea, 188.
Beloperidae, 14.
Belosepidae, 12.
Bicellaridae, 333.
Bicellaridae, 333.
Bicellaridae, 287.
Brachiopoda, p. 25.
Bucardidae, 245.
Buccinidae, 56.
Buccininae, 56.
Buccininae, 56.
Buccininae, 56.
Buclidae, 176.
Bullidae, 175.

Caecidae, 92.
Calyptræidae, 99.
Calyptridae, 99.
Cancellariacea, 48.
Cancellaridae, 48.
Caprinidae, 281.
Caprinidae, 282.
Caprotinidae, 283.
Capulacea, 98.
Capulidae, 98.

Bythiniidae, 80. Bythiniinae, 80. Cardiacea, p. 19. Cardiacea, 246, 247. Cardiacea, 246. Carditacea, p. 20. Carditace, 257. Carditidac, 257. Carinariacea, 120. Carinariidae, 120. Cassidea, 113. Cassididae, 113. Cassidulina, 55. Catenicellidae, 338. Caveidae, 351. Cavidae, 353. Ceidae, 352. Cephalopoda, p. 1. Cellulariadae, 337. Cellulariidae, 337. Cerithia, 89, 90. Cerithiacea, 90. Cerithidae, 90. Cerithiinae, 90a Cerithiopsidae, 89. Ceratitidae, 32. Ceratites, 82. Ceratorachia, p. 16. Ceratoranchia, p. 16. Ceratorachia, 190. Ceriphasiidae, 86. Chamacea, p. 20. Chamacea, 248. Chamidae, 248. Chelyosomidae, 285. Chilinidae, 161. Chilostomata, p. 27. Chiroteuthidae, 6. Chitonellidae, 143. Chitonidae, 142. Chrysodominae, 56c. Cirrhoteuthidae, 1. Cistulea, 67. Cistulinae, 67b. Class A., p. 1. Class B., p. 4. Class C., p. 18. Class D., p. 23. Class E., p. 25. Class F., p. 27. Clausidae, 349. Clavellinacea, p. 23. Clavellinidae, 288, 289. Clionacea, 214.

Geophila, p. 12. Glaucidae, 200. Glauconomidae, 239.

Glauconomyadae, 239. Glossidae, 245. Glossoceras, 27.

Glycimérides, 224. Gomphoceras, 24.

Goniatites, 29. Goniatitoidea, p. 3

Gyroceras, 21.

Haliacea, 46.

Haliidae, 46.

Gomphoceratidae, 24. Goniatitidae, 29.

Goniodorididae, 187.

Goniognatha, p. 12. Gymnolæmata, p. 27.

Gymnosomata, p. 17.

Gyroceratidae, 21.

Dimyaria, p. 18. Diœca, p. 4. Diphyllidiadae, 192.

Diphyllidiidae, 192.

Discinidae, 308.

Doliidae, 112.

Doliolidae, 296

Donacidae, 236.

Dorididae, 185.

Dotnidae, 198.

Dotonidae, 198.

Doridopsidae, 184.

Dreissenidae, 243.

Duplohamata, p. 5.

Electrinidae, 334.

Docoglossa, p. 11. Doliacea, 112.

Diplommatinacea, 69

Diplommatininas, 69b.

Clionellidae, 45.

Clionidae, 214. Clymenidae, 28. Clymeniidae, 28.

Columbellaces, 65.

Columbellidae, 65.

Conchifera, p. 18. Conidae, 43

Conulariidae, 211.

Corbulidae, 226.

Cranchiidae, 5. Craniadae, 307.

Craniidae, 807.

Crescidae, 855. Cricceras, 85.

Crisiadae, 842.

Crinceratidae, 85.

Crassatellidae, 256.

Corbiculaces, p. 19.

Conchae, 238.

Concidea, 43.

Crisiidae, 842. Crisinidae, 850. Haliotacea, p. 11. Haliotidae, 134. Eleidae, 843. Cristatellidae, 311. Eligmidae, 278. Eligmus, 278. Hamiglossa, p. 5. Hamites, 37. Hamitidae, 37. Cryptellidae, 153. Ellobiinae, 166. Elysindae, 204. Elysidae, 204. Emarginulidae, 137. Ctenostomata, p. 29. Cyamiidae, 252. Hamulina, 39. Cycladae, 240. Cyclonassinae, 57a. Hamulinidae, 39. Harpacea, 62. Entoconchidae, 207. Cyclophorea, 68. Cyclophoridae, 68. Harpidae, 62. Helicacea, 150. Cyclophorinae, 68b. Cyclostomacea, 67. Eolididae, 201. Eratoinne, 107b Helicidae, 159. Helicinacea, 124. Cyclostomata, p. 29. Cyclostomea, 67. Erycinidae, 251. Helicinidae, 124. Escharellidae, 821. Helicoceras, 31. Cyclostomidae, 67. Cyclostominae, 67c. Escharellinidae, 322. Helictopoda, p. 25. Hercoceras, 20. Escharidae, 325. Cyclotaces, 68. Escharinellidae, 324. Hercoceratidae, 20. Cyclotea, 68. Eschariporidae, 318. Hermaeidae, 203. Heroidae, 196. Cyclotinae, 68a Eulimidae, 84. Cylichnidae, 175. Heteroceras, 31. Heteromyaria, p. 21. Cylindrellidae, 148. Farciminariadae, 831. Cymbuliacea, 210. Cymbuliidae, 210. Farciminariidae, 331. Heteropoda, p. 10. Heterosalpinz, 207. Fascigeridae, 845. Cymodoceidae, 216. Fasciporidae, 346. Hipponicidae, 97. Hippothoidae, 329. Hippuritidae, 279, 280, 281, 282, 283. Fasciolariacea, 53. Cynodontidae, 58. Cynodontinae, 58a. Fasciolariidae, 53. Cypraeacea, 106. Fasciolariinae, 53b. Cypraeidae, 106a. Fionidae, 202. Hislopiadae, .839. Firolacea, 121. Hislopiidae, 339. Fissurellidae, 136. Cyprinidae, 244. Holognatha, p. 12. Cyrenidae, 240. Hyalacea, 209. Flustrellariadae, 328. Flustrellariidae, 328. Cyrenoididae, 242. Hyalidae, 209. Cyrtoceras, 25. Hydrobiinae, 78. Cyrtoceratidae, 25. Flustrellidae, 327. Hydrocaenacea, 122. Cystiscidae, 50. Flustridae, 332. Hydrocaenidae, 122. Flustrinidae, 326. Cytidae, 354. Hyolithidae, 212. Possari. 81. Fossaridae, 81. Fusacea, 56, 58. Dactylina, 61. Ianthinidae, 116. Dactylobranchia, p. 24. Imbricariina, 58. Fusinae, 53a. Davidsonidae, 305. Imbricariinae, 58b. Davidsoninae, 305c. Incrustata or Rigida, p. 27. Inarticulata, p. 29. Inarticulata fasciculata, p. 29. Gadiniidae, 168. Dendronotidae, 195. Galeommidae, 254. Dentaliidae, 217. Dibranchiata, p. 1. Dicranobranchia, p. 11. Didemnidae, 291, 290a. Gasteropoda, p. 4. Gastrochaenidae, 219. Inarticulata foraminata, p. 29. Gemellariadae, 330. Gemellariidae, 330. Inarticulata operculata, p. 29. Inarticulata tubulata, p. 29. Digitiglossa, p 9.

Inferobranchia, p. 16. Iridinidae, 259.

Janellidae, 158.

Koninckinidae, 303. Kraussininae, 290d.

Lacuninae, 82a. Larvalia, p. 24. Laseidae, 251, 252. Ledidae, 265. Lepetidae, 141. Leptoclinidae, 291. Leptonidae, 253. Licinea, 67. Licineinae, 67a Limacidae, 155. Limacinacea, 208. Limacinidae, 208. Limapontiadae, 205. Limapontiidae, 205. Limidae, 273. Limnaeidae, 164. Limnophila, p. 13. Lingulidae, 309. Lingulinae, 309a. Lioplaces, 74. Lioplacinae, 74a. Liotiadae, 129. Liotiidae, 129. Lithophaga, 237. Littorinae, 82. Littorinidae, 82 Littorininae, 82b. Lituites, 22. Lituitidae, 22. Lophocercidae, 178. Lophopodia, p. 27. Loliginidae, 9. Loligopsidae, 5. Lucinacea, p. 20. Lucinidae, 249.

Mactracea, 231. Mactridae, 231. Macluraeacea, p. 11. Maclureadae, 135. Macluracidae, 135. Magasinae, 290c. Marginellacea, 51. Marginellidae, 51. Marseniidae, 108. Megathyrinae, 290f. Melaniae, 88. Melaniidae, 88. Melaniinae, 88a Melanopidae, 87. Melatomidae, 45. Melongenidae, 55. Mesodesmidae, 232. Mesodesmides, 232. Metarrhiptae, p. 21. Mitracea, 54. Mitridae, 54. Mollurcoidea, p. 23. Monomyaria, p. 21.

Lyopomata, p. 26.

Muricea, 64. Muricidae, 64. Muricinae, 64a. Mutelidae, 259. Myacea, p. 18. Myaires, 225, 226.

Mycetopodidae, 260. Muelleracea, p. 20.

Muelleriidae, 262. Myidae, 225. Myochamidae. 229. Myopsidae, p. 2. Myriozoidae, 344. Mytilidae, 268.

Naiades, p. 20.

Nassacea, 57.

Nassidne, 57. Nassininae, 57b. Naticacea, 100. Naticidae, 110. Nautilidae, 19. Nautiloidae, p. 2. Nautilus, 19. Neptunina, 56. Neritacea, p. 10. Neritidao, 126. Neritinidae, 126. Neritopsidae, 190. Nothoceras, 16.

Nuculidae, 264. Nudibranchiata, p. 15. Obolinae, 809b. Octopoda, p. 1. O. littorales, p. 1. O. pelagici, p. 1 Octopodidae, 2.

Nothoceratidae, 16.

Odontoglossa, p. 5. Oigopsidae, p. 1. Oleacinidae, 144. Olivacea, 61. Olivellina, 61 Olivellinae, 61b. Olividae, 61. Olivinae, 61a

Ommastrephidae, 8.

Onchidiidae, 160 Onchidorididae, 186. Onustidae, 101. Onychoteuthidae, 7. Opisthobranchiata, p. 14. Order I, p. 1. Order II, p. 2. Order III, p. 4.

Order IV, p. 10. Order V, p. 10. Order VI, p. 11. Order VII, p. 12. Order VIII, p. 12. Order IX, p. 12.
Order IX, p. 14.
Order X, p. 15.
Order XI, p. 17.
Order XII, p. 17.
Order XIII, p. 17.
Order XIV, p. 18.
Order XV, p. 21.

Order XV, p. 21.

Order XVI, p. 21. Order XVI, p. 21.
Order XVII, p. 21.
Order XVIII, p. 22.
Order XIX, p. 23.
Order XX, p. 24.
Order XXI, p. 24.
Order XXII, p. 24.

Order XXIII, p. 25.

Order XXIV, p. 26. Order XXV, p. 27. Order XXVI, p. 27. Order XXVII, p. 30. Orthalicea, 147 Ortholicidae, 147. Orthoceras, 26. Orthoceratidae, 26.

Osteodesmidae, 228. Ostreidae, 277. Ostracea, 277. Ostracea, p. 22. Otinidae, 165.

Otininae, 165. Pachycheili, 86. Paludicellea, p. 27 Paludicellidae, 315.

Paludominae, 88c. Pandoridae, 227. Parmacellidae, 154. Patellidae, 140. Pectinatellidae, 310.

Pectinacea, p. 21. Pectinibranchiata, p. 4. Pectinidae, 274.

Pedicellines, p. 27. Pedicellinidae, 313. Pedicularincea, 104. Pediculariidae, 104. Pelonacidae, 284.

Pellibranchiata, p. 16. Pentamerinae, 304a. Perophoracea, p. 23. Perophoridae, 288.

Petricolidae, 237. Petrophila, p. 14. Philinidae, 170. Philomycenidae, 152. Philomycidae, 152. Philonexidae, 3.

Pholadacea, p. 1 Pholadidae, 221. Pholadomyadae, 230. Pholadomyidae, 230. Photina, 56.

Photinge, 56a. Phragmoceras, 23. Phragmoceratidae, 23. Phylactolæmata, p. 27. Phyllidiadae, 191.

Phyllidiidae, 191. Phyllirrhoidae, 206. Physidae, 162. Pinnidae, 269. Pisidiidae, 241 Placunidae, 275.

Planaxes, 91. Planaxidae, 91. Platidiinae, 290e. Ranellacea, 114.

Ranellidae, 114.

Pleurotomacea, 44. Rhabodpleura, 356. Pleurotomariacea, p. 11. Pleurotomaridae, 132. Rhabdopleurae, p. 30. Rhabdopleuridae, 356. Pleurotomariidae, 132. Rhachiglossa, p. 4. Rhiphidoglossa, p. 10. Rhodosoma, 287a. Pleurotomidae, 44 Plumatellidae, 312. Pneumodermacea, 215 Rhodosomidae, 287a Pneumodermonidae, 215. Rhynchonellidae, 304 Podophthalma, p. 10. Polybranchia, p. 16. Rhynchonellinne, 304b. Polybranchia, p. Polyceradae, 188. Ringiculidae, 172. Rissoellidae, 76. Rissoidae, 78. Rissoinae, 78b Polyceridne, 188. Polyclinidae, 292. Polyclininae, 292, 293. Rissoininae, 78c. Rostrifera, p. 6. Rotelladae, 127. Rotellidae, 127. Polyplacophora, p. 12. Polyzoa, p. 27. Pomatiacea, 66. Pomatiidae, 66. Pomatiopsidae, 77. Rudista, p. 22. Runcinadae, 180. Pomatiopeinae, 77. Runcinidae, 180. Porambonitidae, 305.

Pleurobranchidae, 183.

Pleurobranchiidae, 183.

Porambonitinae, 305a. Saccobranchia, p. 23. Salicornariidae, 336. Salicornariidae, 836. Tethyadne, 197. Tethyidae, 197. Tetrabranchista, p. 2. Porellidae, 320. Porellinidae, 319. Poridinae, 323. Potamides, 90. Salpidae, 297. Saxicavidae, 224. Scalarindae, 118. Thalassophila, p. 14. Thecideidae, 300. Potamidinae, 90b. Proboscidifera, p. 9. Proctonotidae, 199. Scalariidae, 118. Thecidiidae, 300. Scaphites, 34. Thecosomata, p. 17. Productidae, 306. Scaphitidae, 34 Thiarae, 88. Proserpinidae, 125. Scissurellidae, 133. Scrupariadae, 335. Tiarinae, 88b Togata, p. 13. Prosopocephala, p. 17. Scrupariidae, 335. Toxoceras, 40.

Scyllacidae, 194.

Selenariadae, 316.

Solenacea, p. 18. Solénacées, 222, 223. Solenidae, 222. Solenoceae, p. 17.

Sparsidae, 348. Spiriferidae, 301, 802.

Solitaria, p. 23.

Psammobiidae, 235. Selenariidae, 816. Pseudobranchia, p. 10. Ptenoglossa, p. 10. Pteriidae, 270. Sepiidae, 11. Sepiolidae, 10. Sepiophora, p. 1. Seraphyinae, 102b. Sigillinidae, 290. Pterocymodoceidae, 216. Pteropoda, p. 17. Pterotrachaeidae, 121. Siphonariidae, 167. Ptychatractidae, 63. Skeneidae, 79. Ptychoceras, 38. Skeneinae, 79. Ptychoceratidae, 38. Sociales, p. 23. Solariidae, 117. Pupacea, 149. Pupidae, 149. Pupinea, 69. Solecurtidae, 223 Solemyadae, p. 20. Solemyadae, 255. Solemyidae, 255. Pupinidae, 69.

Proteobranchia, p. 11. Psammobidae, 235.

Pupininne, 69a.

Pulmonata, p.

Purpuracea, 64. Purpurinae, 64b.

Pulmonifera, p. 12. Pulmonata, p. 12.

Pustulariinae, 106b.

Pygobranchia, p. 15.

Pyramidellidae, 83. Pyrosomatidae, 295. Spirulidae, 13. Spondylidae, 272 Pyrosomidae, 295. Pyrulidae, 111. Steginoporidae, 317. Stoastomidae, 123. Radicellata, p. 28. Stomatellidae, 131. Radicellata articulata, p. 28. Radicellata flexilia, p. 28. Strepomatidae, 86. Streptaxidae, 145. Radiolitidae, 280. Strigatellacea, 60. Radulidae, 272. Stringocephalinae, 290b. Strombinae, 102a Strophomenidae, 305 Strophomeninae, 305b. Styliferidae, 85.

Strombidae, 102.

Subnuda, p. 13. Succinea, 157. Succinidae, 157. Sycotypidae, 111. Synosciidae, 293.

Taeniobranchia, p. 24.

Tanioglossa, p. 6. Tectibranchiuta, p. 14. Tellinidae, 234. Tenagodidae, 94. Terebracea, 47. Terebratulidae, 299. Terebratulinae, 299a. Terebridne, 47. Teredinidae, 220 Teredidae, 220. Testacellea, 144, 146. Testacellidae, 146.

Toxoceratidae, 40. Toxoglossa, p. 4. Trichotropidae, 96.

Tridacnidae, 267. Tridacnides, 267. Tridacnides, Trigones, 263. Trigoniacea, p. 21. Trigoniidae, 263. Triopidae, 189. Tritoniacea, 115.

Tritoniadae, 193. Tritonidae, 115. Tritoniidae, 193. Triviaces, 107.

Triviidae, 107. Triviinae, 107a Trochacea, p. 10. Trochidae, 130. Trochoceras, 18. Trochoceratione, 18.

Truncatellacea, 71. Truncatellidae, 71. Tubigeridae, 347. Tunicata, p 23. Turbinellidae, 59. Turbinidae, 128. Turridae, 60.

Turrilites, 31

Turrilitidae, 31. Turritellae, 95.

Turritellidae, 95. Tylodinadae, 181. Tylodinidae, 181.

# Typica, p. 4.

Umbrelladae, 182. Umbrellidae, 182. Ungulinidae, 250. Unionidae, 258. Urnatellea, p. 27. Urnatellidae, 314.

Vaginulidae, 159. Valvatae, 73. Valvatidae, 78. Vasidae, 59. Vasina, 58.
Velutinidne, 109.
Veneracea, p. 19.
Veneridae, 238.
Verillidae, 244.
Vermetacea, 93, 94.
Vermetidae, 159.
Vesicularindae, 341.
Vitrinea, 151.
Vitrinidae, 151.

Vivipari, 74.
Viviparidae, 74.
Viviparinae, 74b.
Volutacea, 52.
Volutidae, 52.
Volutinae, 52b.
Volutomitrina, 52.
Volutomitrinae, 52a.
Vulsellidae, 271.

Yetina, 52.

88

·			
	·		
		•	
		•	

## INSTRUCTIONS

### FOR OBSERVATIONS OF THUNDER STORMS.

- 1. Give the time of beginning and ending of the storm.
- 2. Give the general direction of the approach of the storm, or the point of the horizon where the storm cloud first appears.
- 3. Give the direction of the wind before, at the time of, and after the storm.
- 4. Note the color of the *lightning*, particularly if it be violet, which probably indicates a cloud of great elevation.
- 5. Does the thunder cloud frequently separate into two parts near your residence? If so, what is the topography of the surface of the earth below?
- 6. Record every instance of the striking of trees and other objects, and every accident by lightning in your vicinity.
- 7. Note the number of seconds the sound of a discharge continues this will give approximately the length of the flash.*
- 8. Note the time between the appearance of the flash and the hearing of the thunder; also the angle of elevation; these will give approximately the height of the cloud.
- 9. Note the temperature of the air before and after the storm.
- Note the depth and temperature of the rain immediately after the storm.
- 11. Note whether any hail fell, how long it continued, the form and size of the hail-stones.
- * The velocity of sound at the temperature of 62° is 1125 feet a second, or nearly a mile in  $4\frac{1}{10}$  seconds.

JOSEPH HENRY,
Secretary of Smithsonian Institution.

▃

# SMITHSONIAN MISCELLANEOUS COLLECTIONS.

236 ———

# CIRCULAR RELATIVE TO HEIGHTS.

For the purpose of forming a general map of the North American Continent, exhibiting the plains, mountains, valleys, etc., the Smithsonian Institution has collected a large amount of material relative to *altitudes*, which has been placed in the hands of W. L. Nicholson, Esq., Topographer of the U. S. Post-Office Department, to be discussed and elaborated.

There must, however, still remain in the hands of individuals and corporations, records of an important character, which would be of great value in properly carrying out the enterprise. It is, therefore, respectfully requested that printed copies, or original manuscripts of records, especially of plotted profiles or maps pertaining to this subject, be forwarded to the Smithsonian Institution.

In stating the heights, as furnished by surveys for railroads, whether actually constructed, or only projected, it is desirable that the levellings be referred to some known point on connecting or intersecting roads, or to the water-surface (highwater, low-water, or mean-tide) of the ocean, or of one of the great lakes, or to the level of a noted stage of water (high or low) of some river. The crossings of the watercourses, ridges, and summits are particularly desired, as well as all considerable and characteristic changes of level, giving, where much difference exists, both grade-line and original surface; the levels of all intersections with other roads are important as means of comparison, and for checking results.

Due credit will be given to all contributors to this work.

JOSEPH HENRY,

Secretary Smithsonian Institution.

SMITHSONIAN INSTITUTION, Washington, D. C.

casing, however, is frequently made so thin, and the cone so slender, in order to save metal, that the point is melted by a powerful discharge.

5th. The shorter and more direct the rod is in its course to the earth the better. Acute angles, made by bending the rod, and projecting points along its course, should be avoided.

6th. It should be fastened to the house by iron eyes, and may be insulated by cylinders of glass. We do not think the latter, however, of much importance, since they soon become wet by water, and, in case of a heavy discharge, are burst asunder.

7th. The rod should be connected with the earth in the most perfect manner possible; and in cities nothing is better for this purpose than to unite it in good metallic contact with the gasmains or large water-pipes in the streets; and, indeed, such a connection is absolutely necessary, if gas or water-pipes are within the house. Electricity, by what is called induction, acts at a distance on the perpendicular gas-pipes within a house, rendering them so highly negative, the cloud being positive, as to attract the electricity from a lightning-rod imperfectly connected with the earth, or even from the air through the roof. Damage to buildings on this account is of constant occurrence. The above connection can be made by soldering to the end of the rod a strip of copper, which, after being wrapped several times around the pipe, is permanently attached to it. When a connection with the ground cannot be formed in the way mentioned, the rod should terminate, if possible, in a well, always containing water; and, where this arrangement is not practicable, it should terminate in a plate of iron or some other metal buried in the moist ground. It should, before it descends to the earth, be bent, so as to pass off nearly at right angles to the side of the house, and be buried in a trench, surrounded with powdered charcoal.

8th. The rod should be placed, in preference, on the west side of the house, in this latitude, and especially on the chimney from which a current of heated air ascends during the summer season.

9th. In case of a small house, a single rod may suffice, provided its point be sufficiently high above the roof; the rule being observed, that its elevation should be at least half of the distance to which its protection is expected to extend. It is safer, however, particularly in modern houses, in which a large amount of iron enters into the construction, to make the distance between two rods

less than this rule would indicate, rather than more. Indeed, we see no objection to an indefinite multiplication of rods to a house, provided they are all properly connected with the ground and with each other. A building entirely inclosed, as it were, in a case of iron rods so connected with the earth, would be safe from the direct action of the lightning.

10th. When a house is covered by a metallic roof, the latter should be united, in good metallic connection, with the lightning rods; and in this case the perpendicular pipes conveying the water from the gutters at the eaves may be made to act the part of rods, by soldering strips of copper to the metal roof and pipes above, and connecting them with the earth by plates of metal united by similar strips of copper to their lower ends; or, better, with the gas or water-pipes of the city. In this case, however, the chimneys would be unprotected, and copper lightning-rods soldered to the roof and rising a few feet above the chimneys, would suffice to receive the discharge. We say soldered to the roof, because, if the contact was not very perfect, a greater intensity of action would take place at this point, and the metal might be burnt through by the discharge, particularly if it were thin.

11th. As a general rule, large masses of metal within the building, particularly those which have perpendicular elevation, ought to be connected with the rod. The main portion of the great building erected for the World's Exhibition at Paris was entirely surrounded by a rod of iron, from which rose at intervals a series of lightning-conductors, the whole system being connected with the earth by means of four wells, one at each corner of the edifice.

The foregoing rules may serve as general guides for the erection of lightning-rods on ordinary buildings, but for the protection of a large complex structure, consisting of several parts, a special survey should be made, and the best form of protection devised which the peculiar circumstances of the case will admit.

•

.

•

.

·

# QUERIES RELATIVE TO TORNADOES.

- 1. STATE the localities over which the storm extended—in the new States, trace the route on the quarter-sections of the U. S. Land Surveys.
- 2. State the date of the occurrence of the storm, and the precise time of day (or height of sun) of its passing over different places.
- 3. State the width of the track at different places, specifying how wide that portion of it was where the most violent effect was produced; and what was the nature of this effect on the surface of the ground—for example, was the surface beaten flat, or was it furrowed.
- 4. Give the shape, color, and velocity of the storm-cloud, and also the general appearance of the clouds in other parts of the sky, previous to, and at the immediate passage of the Tornado.

State whether some of these clouds were of a (dull) grayish color, while others were of a (bright) white color:—whether these differently colored clouds were in opposite parts of the sky—or whether they were in two distinct layers, one above the other—what was the color of the layer (or stratum) which was the higher—how did they appear to be moving—towards or away from each other—and how did the lightning, if any, appear to pass from them—to each other, or to the earth.

- 5. State the direction and force of the wind, before and after the passage of the Tornado—and whether it blew steady or in gusts.
- 6. Describe the thunder and lightning observed:—whether the thunder was sudden or prolonged—and the lightning, whether zigzag, forked, or sheet—and what was its color.
  - 7. Was there accompanying rain, or hail, immediately in the

main track of the Tornado—and was there any at a distance—if so, how far off, on each side of the track.

- 8. Was the day unusually warm, sultry, or not:—were there observed any effects of a superabundance of moisture in the atmosphere—such as deposition on walls and on furniture in basements and other cool places, rendering them wet or clammy to the touch.
- 9. State the character of the weather for some time preceding and following the storm—and, particularly for the few days immediately preceding:—whether it was dry or wet, warm or cool.

On the day of the Tornado, was anything unusual observed in the aspect of the sky—any lurid, "brassy" hue—and if so, how long did it last.

- 10. Give the damage done to life and property:—full statistics of this, between specified points of the course of the storm, are desirable.
- 11. State the manner and direction in which the walls and roofs of buildings appear to have been struck, and to have fallen, or to have been carried away:—whether portions of buildings were twisted around upon their foundations—and whether, in the case of some buildings where the doors and windows are known to have been closed at the time of the storm's passage, the walls or roof were thrown down, as if by an explosion outwards. Careful sketch drawings of any of the appearances will be valuable.
- 12. Give any cases of the stripping of feathers from fowls, and the clothes from persons:—also the manner in which furniture and materials of houses, barns, &c., were destroyed or carried off, and in what direction, and to what distance.
- 13. Did any of the persons in the immediate vicinity of the Tornado, at its passage, experience any peculiar sensations:—any shock, numbness in the limbs, loss of hearing, peculiar smell, feeling of cold, &c., &c.—and how long did these effects last.
- 14. Was anything unusual perceived in regard to the wounds of the persons or animals injured: were they difficult to heal, and was there anything unusual in the appearance of the bodies of the killed.
  - 15. State any facts observed as to the direction in which the

trees were thrown down, or broken off, on the north, and on the south side of the track.

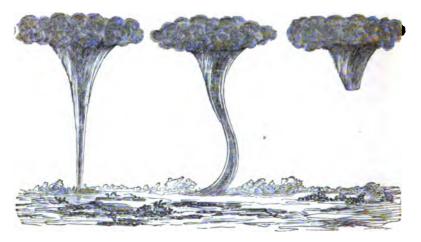
16. What effects were produced on the trees—whether broken off at the trunk, uprooted, or twisted around—or separated into splinters: did the sap remain in the wood, or was it dried up or evaporated:—what effect was produced on the bark, and what on the branches and leaves:—did any of the leaves present the appearance of having been scorched.

Did any particular trees that stood in the track appear to have escaped the destructive action—if so, what kind of trees were these.

- 17. Were there any well-authenticated instances of hay, straw, or grain-stacks, or stables, or other buildings having been set on fire by the lightning, during the passage of the storm.
- 18. Was any case noticed of iron or steel which exhibited marks of heating or of mechanical action—if so, describe the appearance.
- 19. Were there any side-currents towards, or offshoots from the main course of the Tornado:—and where did these commence and terminate.
- 20. State what was observed in regard to the whirl of the Spout or funnel-shaped cloud:—the direction of its rotation on its axis, whether "with the sun," that is, in the direction of the hands of a watch when placed face upward—or "against the sun," that is, opposite to that of the hands of a watch.
- 21. What was the color and general appearance of the Spout: was it always in contact with the ground, or did it sometimes rise up and again descend:—was it perpendicular or nearly so to the earth's surface, or was it curved or inclined in the whole or part of its length, and in which direction:—was it of uniform diameter or varying:—what was its apparent height as compared with buildings, trees, or other objects passed over—and how did it seem to be connected with the clouds above it.

If more than one Spout was in sight at the same time, describe their relative appearances and motions.

A sketch (however rough, if accurate) of the appearance of the Spout will be valuable, as also of its changes in figure, as it moved onward—thus:—



- 22. Were branches, limbs, or trunks of trees, articles of clothing, pieces of furniture or of wagons, or of houses observed carried up in the Spout—if so, how did they appear to be moving—how high and how far did they go—and in what manner were they dropped, whether gently or with violence.
- 23. Was the onward speed of the Spout uniform, or observed to vary:—did the track it left on the surface of the ground spread out or contract in width at different parts of its course, particularly near rivers and creeks:—and what effects were observed to be produced on surfaces of water, while it was passing over them.
- 24. Did any detached clouds appear to move towards the Spout—in what manner did they join it—did they increase its dimensions, or did they appear to be condensed in it.

Did any clouds appear to move off from the Spout.

25. Was any lightning observed in the Spout itself, as well as in the accompanying main storm-cloud, from which the Spout usually is seen to hang down.

What was the character of this lightning—was it a glow of light—a discharge along the length of the Spout—or transverse—or was it globular in appearance.

Brief answers to even a part of these queries, sent to the Smithsonian Institution, Washington, D. C., may be of importance, and will be thankfully acknowledged.

# SMITHSONIAN MISCELLANEOUS COLLECTIONS.

234 -

# QUESTIONS RELATIVE

TO THE

# FOOD FISHES OF THE UNITED STATES.

# A. NAME.

1. What is the name by which this fish is known in your neighborhood? If possible, make an outline sketch for better identification.

# B. DISTRIBUTION.

- 2. Is it found throughout the year, or only during a certain time; and for what time?
- 3. If resident, is it more abundant at certain times of the year; and at what times?

# C. ABUNDANCE.

- 4. How abundant is it, compared with other fish?
- 5. Has the abundance of the fish diminished or increased within the last ten years, or is it about the same?
  - 6. If diminished or increased, what is the supposed cause?
  - 7. What is the amount, or extent, of the change in abundance?

# D. Size.

- 8. What is the greatest size to which it attains (both length and weight), and what the average?
- 9. State the rate of growth, per annum, if known; and the size at one: two: three: or more years.

10. Do the sexes differ in respect to shape, size, rate of growth, etc.?

#### E. MIGRATIONS AND MOVEMENTS.

- 11. By what route do these fish come in to the shore; and what the subsequent movements?
  - 12. By what route do they leave the coast?
  - 13. Where do they spend the winter season?
- 14. When are the fish first seen or known to come near the shore, and when does the main body arrive; are the first the largest are there more schools or runs than one coming in, and at what intervals?
- 15. When do the fish leave shore, and is this done by degrees, or in a body?
- 16. Is the appearance of the fish on the coast regular and certain, or do they ever fail for one or more seasons at a time, and then return in greater or less abundance? If so, to what cause is this assigned?
  - 17. How do the runs differ from each other in number and size?
- 18. Which sex comes in first; and how far advanced is the spawn in the female on first arriving?
- 19. Will either sex, or both, take the hook on first arriving; and if so, is there any period of the stay of the fish when they refuse it?
- 20. If they refuse the hook at first, how soon do they begin to take it after arriving?
- 21. Do the schools of fish swim high or low; and is their arrival known otherwise than by their capture; that is, do they make a ripple on the water: do they attract birds, etc.?
- 22 What is the relation of their movements to the ebb and flow of the tide?
  - 23. Does spawn ever run out of these fish taken with a hook?

- 24. Answer same question in regard to fish taken in nets or pounds; is the spawn ever seen in any quantity floating about inside of nets?
- 25. Are these fish anadromous; that is, do they run up from the sea into fresh water for any, and for what purpose?
- 26. If anadromous, when are they first seen off the coast; when do they enter the mouths of the rivers, and what is the rate of progression up stream?
- 27. If anadromous, what the length of their stay in fresh water, and when do they return to the sea?
  - 28. Do the different sexes or ages vary in this respect?
- 29. Do these fish come on to the breeding grounds before they are mature: or do you find the one or two year old fish with the oldest?
- 30. What are the favorite localities of these fish; say whether in still water or currents; shallow or deep water; on the sand; in grass; about rocks, etc.?
  - 31. What depth of water is preferred by these fish?
- 32. What the favorite temperature and general character of water?

#### F. RELATIONSHIPS.

- 33 Do these fish go in schools after they have done spawning: or throughout the year; or are they scattered and solitary?
  - 34. Have they any special friends or enemies?
- 35. To what extent do they prey on other fish; and on what species?
- 36 To what extent do they suffer from the attacks of other fish: or other animals?

# G. Food.

- 37. What is the nature of their food?
- 38. Are there any special peculiarities in the manner of feeding of these fish?

## 39. What amount of food do they consume?

# H. REPRODUCTION.

- 40. Is there any marked change in the shape or color of either sex during the breeding season; or any peculiar development of, or on any portion of the body, as the mouth, fins, scales, etc.?
- 41. Are there any special or unusual habits during the spawning season?
  - 42. Is spawning interfered with by lines or nets, or otherwise?
- 43. At what age does the male begin to breed; and at what age the female?
  - 44. For how many years can these fish spawn?
  - 45. Does the act of spawning exert an injurious effect?
  - 46. Where do these fish spawn, and when?
- 47. Can you give any account of the process: whether males and females go in pairs, or one female and two males: whether the sexes are mixed indiscriminately, etc.?
  - 48. Is the water ever whitened or colored by the milt of the male?
  - 49. What temperature of water is most favorable for hatching?
- 50. At what depth of water are the eggs laid, if on, or near the bottom?
  - 51. What is the size and color of the spawn?
- 52. What is the estimated number for each fish and how ascertained?
  - 53. Answer the question for one season, and for the lifetime?
- 54. Do the eggs, when spawned, sink to the bottom, and become attached to stones, grass, etc., or do they float in the water until hatched?
  - 55. Do the fish heap up or construct any kind of nest, whether

of sand, gravel, grass, or otherwise; and if so, is the mouth, the snout, or the tail used for the purpose, or what; and if so, how is the material transported; or do they make any excavation in the sand or gravel?

- 56. Do they watch over their nest, if made, either singly or in pairs?
- 57. When are the eggs hatched, and in what period of time after being laid?
  - 58. What percentage of eggs laid is usually hatched?
  - 59. What percentage of young attains to maturity?
  - 60. What is the rate of growth?
- 61. Do the parents, either or both, watch over the young after they are hatched?
  - 62. Do they carry them in the mouth, or otherwise?
  - 63. What enemies interfere with, or destroy, the spawn or the young fish? Do the parent fish devour them?
  - 64. Are the young of this fish found in abundance, and in what localities?
    - 65. On what do they appear to feed?

#### I. ARTIFICIAL CULTURE.

66. Have any steps been taken to increase the abundance of this fish by artificial breeding?

#### K. PROTECTION.

67. Are these fish protected by law, or otherwise?

# L. DISEASES.

68. Has any epidemic, or other disease, ever been noticed among them, such as to cause their sickness or death in greater or less number?

69. When have these epidemics taken place, and to what causes have they been assigned?

# M. PARASITES.

70. Are crabs: worms: lampreys, or other living animals, found attached to the outside, or on the gills of these fish?

#### N. CAPTURE.

- 71. How is this fish caught; if with a hook, what are the different kinds of bait used, and which are preferred?
  - 72. If in nets, in what kind?
- 73. At what season and for what period is it taken in nets, and when with the line?
- 74. What would be the average daily catch, of one person, with the hook, and what the total for the season?
- 75. Answer the same question for one seine, or pound, of specified length.
- 76. Is the time of catching with nets, or pounds, different from that with lines?
  - 77. Is it caught more on one time of tide than on another?
    - O. ECONOMICAL VALUE AND APPLICATION.
- 78. What disposition is made of the fish caught, whether used on the spot; or sent elsewhere, and if so, where?
  - 79. What is its excellence as food, fresh or salted?
  - 80. How long does it retain its excellence as a fresh fish?
  - 81. To what extent is it eaten?
  - 82. Is it salted down, and to what extent?
- 83. Is it used, and to what extent, as manure, for oil, or for other purposes, and what?

- 84. What were the highest and lowest prices of the fish, per lb., during the past season, wholesale and retail, and what the average, and how do these compare with former prices?
  - 85. Are these fish exported; and if so, to what extent?
  - 86. Where is the principal market of these fish?

- 87. NAME OF AND ADDRESS OF OBSERVER.
- 88. Date of Statement.



# MEMORANDA OF INQUIRY

#### RELATIVE TO THE

# FOOD FISHES OF THE UNITED STATES.

- A. Name of Fish in different localities.
- B. Geographical distribution.

At present time.

Change of location with season of year.

In former times.

Supposed cause of any permanent change.

# C. Abundance.

At present time: in different seasons and localities,

In former times: in different seasons and localities.

Supposed cause of variation in abundance.

Probable change in the future.

# D. Size.

Maximum length and weight.

Average length and weight.

Rate of growth.

Length and weight at age of one: two: three: etc., years.

Difference of sexes in this respect.

### E. Migrations and movements.

Arrival and departure.

Period of stay.

Certainty of arrival.

Route of movement, coming and going.

Number and times of runs or schools in one season, and differences if any in the runs.

Difference in arrival of the sexes and ages.

Feeding of fish after arrival.

Summer abode.

Winter abode.

If anadromous: when entering the fresh water and when leaving.

If anadromous: what the movements up and down fresh waters, of adults, or of young.

Rate of progression of schools in fresh or salt water.

Relation of movements to tides.

Depth of water preferred by schools or single fish.

Temperature and general condition of water preferred.

Favorite localities in any region; whether bottom be sandy, rocky, muddy, grassy, etc.

# F. Relationships.

To its own species: whether gregarious, solitary, grouped by age or sex at any season, predaceous, etc.

To other animals: whether preyed upon by them, feeding upon them, etc.

Special enemies: friends: or companions.

### G. Food.

Nature.

Mode of taking it.

Time of taking it.
Quantity consumed.

# H. Reproduction

Interference with spawning, by lines, nets, etc.

Age of male and of female respectively, when capable of reproduction.

Change in physical condition (color, shape, fatness, etc.).

Date of spawning, and its duration as relating to the individual as well as to the species.

Preferred localities for spawning, as to place, temperature, etc.

Special habits during spawning season.

Special habits before or after spawning.

Ratio of mortality in old fish from spawning.

Number of successive years of capacity for spawning.

Nesting places.

Are nesting places prepared? if so, whether of grass, stones, sand, etc., or cleared areas, and whether made by one sex only, or both?

If ridges or furrows are formed, how made.

### The eggs.

Mode of fecundation.

Where laid.

Where and how attached, if at all.

Covered up, and how, or exposed in water.

Number laid by one fish at one time, and the number during lifetime.

Size and color

Special enemies.

Guarding of eggs by either sex.

The embryo and young fish.

Ratio of fish hatched to number of eggs laid.

Proportion of young fish attaining maturity.

Movement after birth: whether remaining on spawning ground, and how long; or whether changing from fresh to salt, or salt to fresh water, etc., and when.

General appearance, and successive changes.

Rate of growth.

Special food.

Enemies and diseases of eggs and young.

Relation of parent fish, of either sex, to young: whether protective, predatory, etc.

- I. Diseases.
- K. Parasites.
- L Artificial fish-culture.
- M. Protection by law.
- N. Capture.

Methods.

By lines.

By nets.

Floating, or movable (seines, gill-nets, etc.).

Fixed (traps, pounds, weirs, dams, etc.).

Other methods of capture.

Bait.

Influence of modes of capture on abundance.

Season of capture.

By lines.

By nets.

Otherwise.

Time of tide when taken.

Statistics of capture.

By lines.

By nets.

Otherwise.

Value of fish taken.

Disposition of fish taken.

O. Economical value and uses.

For food (fresh, salted, smoked, dried, etc.).

For oil.

For manure.

For other purposes.

Price, in its variations with place, season, and year.

Export and trade, in their variations with place, season, and year.

P. Remarks relative to foreign or domestic allies.

·		-
•		
		,

____ 238 _____

# LIST

OF THE

# INSTITUTIONS, LIBRARIES, COLLEGES,

AND OTHER ESTABLISHMENTS IN

# THE UNITED STATES .

IN CORRESPONDENCE WITH THE

# SMITHSONIAN INSTITUTION.



WASHINGTON: SMITHSONIAN INSTITUTION. JULY, 1872

### ADVERTISEMENT.

THE following list of libraries, colleges, etc., in the United States has been prepared for the Institution, by W. J. Rhees, Chief Clerk, to facilitate its system of literary and scientific exchanges. It has been printed as a part of the Smithsonian Miscellaneous Collections, with the idea that it might be generally serviceable to educational and publishing establishments.

In order to ensure as much correctness as is compatible with the character of the work, proof slips were sent to different persons in each. State for revision. The Institution, however, desires to receive additional information relative to new institutions, changes of title or character of the old ones, etc.

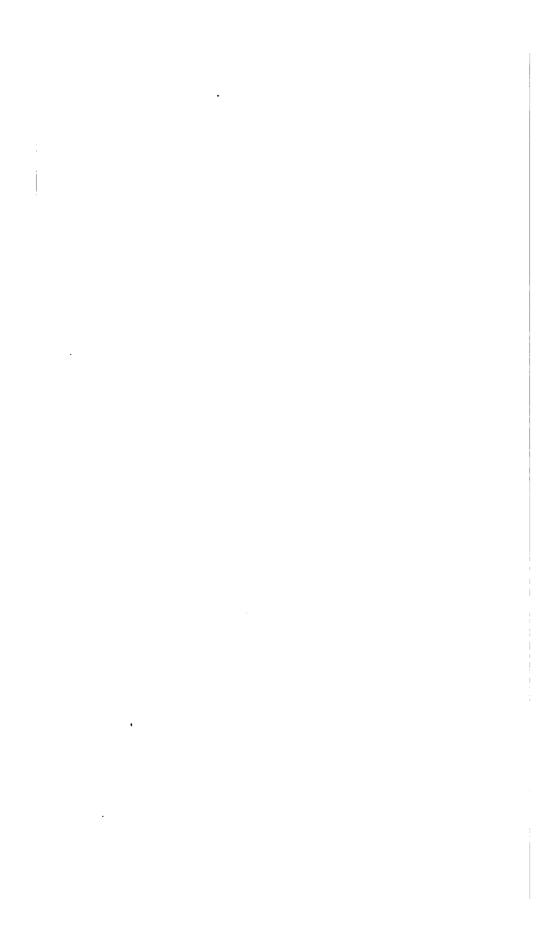
JOSEPH HENRY, Secretary & I.

Smitesonian Institution, Washington, July, 1872.

(2)

# CONTENTS.

				Page	I				PAGE
ALABAMA			•	1	Missouri .				104
ARKANSAS				3	Montana .				109
Arizona				3	Nebraska .				110
CALIFORNIA				4	NEVADA .				111
CONNECTICUT				7	NEW HAMPSHIRE				111
Delawabe				14	New Jersey.				116
DISTRICT OF	Colt	MBIA		15	New Mexico				121
FLORIDA				18	New York .				122
Georgia				19	North Carolina				164
IDAHO .				22	Оню				167
Illinois				23	Oregon				183
Indiana				35	PENNSYLVANIA				184
Indian Tere	RITOR	Y		41	RHODE ISLAND				208
Iowa .			٠.	42	South Carolina				211
Kansas.				47	Tennessee .				214
Kentucky				49	TEXAS				218
Louisiana				53	Utah				220
MAINE .				60	VERMONT .				222
Maryland				66	Virginia .				227
MASSACHUSE	rts			69	WASHINGTON .				231
Mich-gan				92	WEST VIRGINIA				231
MIFNESOTA				99	Wisconsin .				233
M.ISSISSIPPI				102	Wyontha	-	-	•	937



# LIST OF LIBRARIES, COLLEGES, &c.

# ALABAMA.

	T
	East Alabama Male College.
Bellefonte	
	Rockwest Academy.
CENTRAL INSTITUTE	
CLAYSVILLE	
	Masonic Female Seminary.
DECATUR	•
	Public School Library.
EUFAULA	
	Union Female College.
FLORENCE	Florence University.
	Synodical Female College.
	Wesleyan College.
GREENSBORO	Female Academý.
	Female College.
	Southern University.
GREENVILLE	Collegiate and Military Institute.
	Green Springs School.
HUNTSVILLE	
	High School.
LAFAYETTE	
	Female High School.
	Male High School.
LAGRANGE	
	Southern Female College.
MARION	
	Howard Theological Institute.
	Judson Female Institute.
	Southern Alabama Institute.
MOBILE	
	Catholic Female Orphan Asylum.
	Catholic School.
	Collegiate Institute.
•	Emerson Institute.
	Franklin Library Society.
	85

MOBILE.....Hebrew Institute. Mechanics' Institute. Medical College of Alabama. Protestant Orphan Asylum. Public School Commissioners. St. Vincent's Orphan Asylum. Young Men's Christian Association. Montgomery ..... High School.

State Library. Young Men's Christian Association. Moulton......Muscle Shoals Baptist Female Institute.

State Agricultural Society.

OPELIKA ..... East Alabama Agric. and Hort. Society. Robinson's Springs Deaf and Dumb School. SALEM .....Female Institute.

Selma .....Young Men's Christian Association. Somerville ____Academy.

Ladies' Academy of the Visitation. SPRING HILL _____Church Home School.

Ecclesiastical Seminary. Spring Hill (St. Joseph's) College. Summerfield.....Centenary Institute.

Summerfield Institute. TALLADEGA ..... Institute for Deaf, Dumb, and Blind Male High School.

Southwood Select School. Talladega College.

> Talladega Conference Institute. _Academy of St. John the Baptist. Alabama Central Female College.

Alabama Historical Society. Insane Hospital.

Observatory.

Methodist Female High School.

University of Alabama. Tuskegee ..... Classical and Scientific Institute. Collegiate Institute.

TUBCALOOSA....

East Alabama Female College. Eclectic School.

Literary and Scientific Club. WETUMPKA ..... State Prison.

# ARKANSAS.

ARKADELPHIA	_Female Institute.
	Malo Institute.
BATESVILLE	_Institute.
	Makemie College.
Boonsboro	Cane Hill College.
CAMDEN	_Female Institute.
	Hartwell's Academy.
EAGLETOWN	_Choctaw National Library.
	_Monticello Library.
FAYETTEVILLE	_Agricultural Society.
	Arkansas College.
FORT SMITH	College of St. Andrew.
	Saint Anne's Academy.
HOLLY GROVE	
	Institution for Deaf and Dumb.
	Institute for the Blind.
	Mercantile Library Association.
	St. John's College.
	Saint Mary's Academy.
	State Library.
•	State Prison.
Powhatan	_Theological Society.
	Young Men's Library.
	.Male and Female Academy.

# ARIZONA.

PRESCOTT.....Territorial Library.
TUCSON......Academy of the Holy Family.

### CALIFORNIA.

BENICIA _____College of St. Augustine.

HEALDSBURG.....Alexander Academy. Los Angeles.....St. Vincent's College.

COLD SPRING.....Library.
DOWNIEVILLE....Library.
GRASS VALLEY.....High School.

MARYSVILLE ____Academy of Notre Dame. Marysville College. Marysville Library. Adelphic Union Literary Society. Mercantile Library Association. Monterey .....Library Association. NAPA CITY _____Collegiate Institute. Napa City Library. Odd Fellows' College and Home. NEVADA CITY_____High School. Library Association. Institution for Deaf, Dumb, and Blind. Lyccum. Oakland Seminary. Pacific Theological Seminary. University of California. OROVILLE ____Library. PETALUMA....Liberty Library. Petaluma College. PINE GROVE ____Library. PLACERVILLE ..... El Dorado Agricultural Society. SACRAMENTO......High School. Lyceum. Odd Fellows' Library. Pioneer Association. Sacramento Library Association.

State Agricultural Society.

_State Library. SACRAMENTO....

Young Men's Christian Association.

San Francisco ____Academy of Natural Sciences.

Board of Education.

California Pharmaceutical Society.

City Female Seminary.

Hebrew Young Men's Association.

High School, (Male.)

" (Female.)

Industrial School.

Mechanics' Institute.

Medical Dep't University of the Pacific.

Mercantile Library Association.

Monumental Engine Company.

Navy Yard Library. Notre Dame Academy.

Odd Fellows' Library.

Presentation Convent School.

Protestant Orphan Asylum.

Russian and Pan-Slavonic Benev. Soc.

St. Ignatius College.

Philhistorian Debating Society.

Sanctuary Society.

St. Mary's Association.

St. Mary's College.

Sansome Hook-and-Ladder Company.

Society of California Pioneers.

State Reform School.

Toland Medical College.

Union College.

University College. Verein Association.

"What Cheer" Library.

Young Men's Christian Association.

SAN JOSÉ .... _Academy Notre Dame.

High School.

Pacific University.

San José Institute.

State Normal School.

Young Men's Christian Association.

Young Men's Literary Association.

6

San Juan----St. John's Institute. SAN QUENTIN ..... State Prison. SAN RAFAEL.....San Rafael College. SANTA BARBARA....College of our Lady of Guadalupe. Franciscan College. Santa Barbara Library. SANTA CLARA.....Female Collegiate Institute. Santa Clara College.

Parthenian Dialectic Society.

Philalethic Literary Society. Philhistorian Debating Society. University of the Pacific.

Archanian Society. Hesperian Society. SANTA INES.....College.

High School.

SANTA CRUZ____High School.

SANTA ROSA ....... Pacific Methodist College. Sonoma____College.

College School. 

Tuolumne County Scientific Society. STOCKTON ..... Female Institute.

> Odd Fellows' Library. Society of Natural History. State Insane Asylum.

Stockton Library Association. Young Men's Christian Association.

VACAVILLE ..... California College.

COLORADO.

CENTRAL CITY......Miners and Mechanics' Institute.

DENVER .....Colorado Agricultural Society.

YREKA.....Siskiyou Agricultural Society.

Colorado Seminary.

Saint Mary's Academy.

Territorial Library.

Woodland......Hesperian College.

TRINIDAD .....Academy. Catholic School.

# CONNECTICUT.

Ansonia	Young Men's Christian Association.
Ashford	
BARKHAMSTED	
Berlin	
	Library.
	_Agricultural Society.
Bethel	
Ветненем	_Library Association.
BIRMINGHAM	High School.
•	Public School Library.
	Young Men's Institute.
BLOOMFIELD	
Branford	
	Library.
	Young Men's Christian Association.
BRIDGEPORT	Bridgeport Library.
	Golden Hill School Library.
	High School.
	Young Men's Christian Association.
BRISTOL	Agricultural Society.
	High School.
	Young Men's Christian Association.
BROOKLYN	Library.
	Windham County Agricultural Society.
CENTRAL VILLAGE.	High School.
	Episcopal Academy of Connecticut.
	Library.
CLINTON	_Morgan School.
	Library.
COLLINSVILLE	High School.
COLCHESTER	Bacon Academy.
	Young Men's Christian Association.
CROMWELL	Friendly Association.
	High School Library.
DANBURY	
	High School.
	Young Men's Christian Association.
DARIEN	Fitch's Home for Soldiers' Orphans.

DARIEN DEPOT.....Young Ladies' Seminary.

Lyceum and Library. East Haddam .....Library. East Hampton .... High School. East Hartford .... Agricultural Society. High School. Library. East Windson....Library. St. Margaret of Cortona's Academy. EASTON ____Staples Free School. ELLSWORTH ____Boarding School. FALLS VILLAGE ..... Union Agricultural Society. FAIRFIELD ____Academy. FARMINGTON .....Farmington Library Company. Hart's School for Boys. Miss Porter's School for Young Ladies. GLASTENBURY _____Academy. Goshen ____Academy. The Goshen Library. Young Men's Christian Association. Granby Library Association. GREENWICH ____Academy. Young Men's Christian Association. GUILFORD _____Farmers and Mechanics' Society. Guilford Institute. Social Library. Union Library. Young Men's Christian Association. HADDAM .....Brainard Academy. Hamden____Everest's School.

HARTFORD .....American Asylum for Deaf and Dumb.

Female Academy. Hartford Farmers' Club.

Connecticut Society of Natural History. English and Classical Academy.

Historical Society of Connecticut.
Hartford County Agricultural Society.

HARTFORD ..... High School and Grammar School. Hartford Hospital. Law Library. Madame Draper's School. Retreat for the Insane. State Library. Theological Institute of Conn. Atheneum. Nettleton Rhetorical Society. Society of Inquiry. Trinity College. Wadsworth Atheneum. Watkinson Library. Young Men's Institute. Young Men's Christian Association. HARTLAND....Library Association. Kensington ..... Young Men's Christian Association. LAKEVILLE Library. School for Imbeciles. LEDYARD .....The Bill Library. LIME ROCK------High School. LITCHFIELD ...... Agricultural Society. Historical and Antiquarian Society. Lunatic Asylum. MADISON ....Lee's Academy. MANCHESTER ..... Cheney Brothers' Library. Ladies' Library Association. Mansfield ......Soldiers' Orphans' Home. MARLBOROUGH ____ Library. MIDDLEBURY .... Library. MIDDLETOWN .....Berkeley Divinity School. Chase's Preparatory School. Female Seminary. High School. Hospital for the Insane. Industrial School for Girls. Introductory and Preparatory School. Middlesex County Agricultural Society. Maple Grove School.

MIDDLETOWN ...... Wesleyan University. Peithologian Society. Philorhetorian Society. Young Men's Christian Association. Young Men's Literary Association. . High School. Lyceum and Library. Milford and Orange Agric'l Society. Young Men's Christian Association. Morris ..... Young Men's Christian Association. MYSTIC BRIDGE ..... High School. Young Men's Christian Association. MYSTIC RIVER ..... High School. Young Men's Christian Association. NEW BRITAIN_____Collegiate Institute. High School. Library Association. State Normal School. Young Men's Christian Association. NEW CANAAN ..... Church Hill Institute. Young Men's Christian Association. NEW HAVEN .... American Oriental Society. Boarding School for Boys. Classical and Mathematical School. College of Business and Finance. Classical and Scientific School. Collegiate and Commercial Institute. Conn. Academy Arts and Sciences. English and Classical School. Grove Hall Female Seminary. General Hospital of Connecticut. Hopkins Grammar School. High School. Handel and Haydn Society. Harmonical Society. Library of First Church and Society. Literary Club. Mendelssohn Society.

> New Haven Colony Historical Society. New Haven Co. Agricultural Society.

NEW HAVEN ...... New Haven Co. Horticultural Society. State Teachers' Association. Sciect Classical School. Yale College. Brothers in Unity Society. Law School. Linonian Society. Medical School. Missionary Society. Observatory. School of Fine Arts. Sheffield Scientific School. Theological School. Young Ladies' Boarding School. Young Ladies' Board'g and Day School. Young Men's Institute (Library.) Young Men's Christian Association. " (German.) NEW LONDON ......Bartlett High School. Bulkeley School. Young Ladies' High School. Young Men's Christian Association. Young Men's Library Association. NEW MILFORD _____Housatonic Agricultural Society. Parish Libraries. NEWTOWN _____Academy. NEW PRESTON ..... Waramaug Academy. NORTH CANAAN ..... Douglas Library. Norfolk Academy. Library. NORTHFORD....Library. NORTH STONINGTON ... Young Men's Christian Association. NOBWALK .....Fairfield County Agricultural Society. High School. Young Men's Christian Association. Norwich.....Free Academy. Horticultural Society. New London Co. Agricultural Society. Otis Library. Young Men's Christian Association. OLD LYME.....Academy.

Rectory School.

OLD SAYEROOK.....Ladies' Library Association.

	Acctory School.
Oxford	Agricultural Society.
PLAINFIELD	_Academy.
	Young Men's Christian Association.
PLYMOUTH	Academy.
PORTLAND	High School.
_	Parish Library.
	Two Social Libraries.
PUTNAM	High School.
	Library Association.
	Young Men's Christian Association.
REDDING	Georgetown Seminary.
	Young Ladies' Boarding School.
RIDGEFIELD	Agricultural Society.
Rockville	
	Reading Room.
	Tolland County Agricultural Society.
Roxbury	Young Men's Christian Association. Library Association.
Salisbury	
SCOTLAND	•
SEYMOUR	
	Vanna Manta Obstation Association
SHARON	Library.
South Glastenbury	
Southington	
	Young Men's Christian Association.
	_Betts' School for Boys.
	Boys' Boarding Schools.
	High School.
	Lyceum.
•	Miss Aiken's Young Ladies' School.
	Parish Library and Reading Room.
	Young Ladies' Boarding School.
	Young Men's Christian Association.
	Tours with a cuttonen tracontenon

Willcox's School for Boys.

Library and Reading Room.

Suffield ..... Connecticut Literary Institute.
Parish Libraries.

STRATFORD ..... Academy.

TERRYVILLE	_Library.
THOMASTON	_Academy.
	Library.
THOMPSON	_Library.
TOLLAND	High School.
Torringford	_Union School District Library.
WALLINGFORD	_Library.
WATERBURY	_Bronson Library.
	High School.
•	Scientific Society.
•	Young Ladies' Collegiate Institute.
	Young Men's Christian Association.
WATERTOWN	Academy.
	Agricultural Society.
WESTBROOK	_Library.
	_Cream Hill Agricultural School.
	Farmers' Club.
West Hartford	Library.
	Young Men's Christian Association.
WEST HAVEN	_Institute and Library.
WEST KILLINGLY	
•	Young Men's Christian Association.
	Young Men's Library Association.
WEST MEBIDEN	_State Reform School. Young Men's Christian Association.
\	Young Men's Christian Association.
Westport	Farmers' Club.
	Library Association.
WEST WINSTED	_Agricultural Society.
Wethersfield	High School.
	Rose Library.
	State Prison.
WILLIMANTIC	High School.
	Library Association.
WILTON	•
WINDSOR	
	Young Ladics' Institute.
	Young Men's Christian Association.
Winsted	Agricultural Society.
	High School.
•	Young Men's Christian Association.
WOLCOTTVILLE	_High School.

#### DELAWARE.

Wolcottville	Library Association.
	Young Men's Christian Association.
WOODBURY	Academy.
	Agricultural Society.
	Library.
	Young Men's Christian Association.
WOODSTOCK	_Agricultural Society.
	Bowen Academy.

	DELAWARE.
DOVER	Kent County Agricultural Society
	Public Library
	State Library.
FELTON	Felton Academy.
	Academical Rhetorical Library.
	Georgetown Library.
Hockessin	Prospect Hill Farmers' Club.
	Lincoln Agricultural Society.
MILFORD	Farmers' Club.
NEWARK	Delaware College.
	Athenean Society.
	Delta Phi Society.
	Newark Academy.
NEW CASTLE	Ashmun Institute.
	New Castle Public Library.
SMYRNA	Library Association.
	Academy of the Visitation.
	Classical and Mathematical Institute.
	Kappa Gamma Society.
	Delaware Historical Society.
	<b>5</b> . 1

Kappa Gamma Society.

Delaware Historical Society.

Delaware Horticultural Society.

Hannah More Academy.

New Castle County Agric. Society.

Normal School.

Odd Fellows' Library.

Rockland Library.

Shields Library.

St. Mary's College.

WILMINGTON _____Taylor & Jackson's Academy.

Irving Literary Society.

Wesleyan Female College.

The I. R. I. S. (Society.)

Wilmington Institute (Library.)

Workingmen's Institute.

Young Ladies' Institute.

Young Men's Free Library.

WYOMING......Wyoming Institute.

Philomathean Society.

# DISTRICT OF COLUMBIA.

### United States Government.

CONGRESS OF THE U.S.-Botanic Garden.

Library of Congress.

U.S. House of Representatives.

U. S. Senate.

COURT OF CLAIMS.

DEPARTMENT OF AGRICULTURE.

DEPARTMENT OF JUSTICE.

EXECUTIVE MANSION.

· Interior Depart't_Bureau of Education.

Census Office.

General Land Office.

Indian Office.

Patent Office.

Pension Office.

NAVY DEPARTMENT_Bureau of Construction and Repair.

Bureau of Equipment and Recruiting.

Bureau of Medicine and Surgery.

Bureau of Navigation.

Bureau of Ordnance.

Bureau of Provisions and Clothing.

Bureau of Steam Engineering.

Bureau of Yards and Docks.

Hydrographic Office.

NAVY DEPARTMENT ... Nautical Almanac Office.

Naval Observatory.

Navy Yard.

Signal Office.

POST OFFICE DEPARTMENT.

STATE DEPARTMENT.

SUPREME COURT OF THE U.S.

TREASURY DEPART'T. Bureau of the Customs.

Bureau of Engraving and Printing.

Bureau of Internal Revenue. Burcau of Revenue Marine.

Bureau of Statistics.

Bureau of Weights and Measures.

Light-House Board.

Solicitor's Bureau.

U. S. Coast Survey.

WAR DEPARTMENT ... Adjutant General's Department.

Bureau of Military Justice.

Bureau of Refugees, Freedmen, and

Abandoned Lands. Engineer Department.

Headquarters of the Army.

Inspector General's Department. Medical Department.

Army Medical Museum.

Ordnance Department.

Pay Department.

Quartermaster's Department.

Signal Department.

Subsistence Department.

Academy of the Visitation. Georgetown ----

Georgetown College.

Observatory.

Philodemic Society.

Philonomosian Society.

Reading Room Association.

Reform School.

WASHINGTON ____Academy of the Visitation.

American Colonization Society.

American Union Academy of Science, Literature, and Art.

WASHINGTON.....Association for Improvement of Condition of Poor.

Association for Prevention of Cruelty to Animals.

Board of Health.

Board of Public Works.

Board of Trade.

Columbian College.

Enosinian Society.

Law Department.

Medical Department.

Philophrenian Society.

Theological Department.

Columbia Hospital for Women.

Columbia Institution for the Deaf and Dumb.

Columbian Library Company.

Corcoran Art Gallery.

District Court.

Emerson Institute.

Fruit-Growers' Association.

Georgetown College Law Department.

Georgetown College Medical Department.

German Reading and Chess Club.

Gonzaga College.

Government Hospital for the Insane.

Governor of the Territory.

Howard University.

Law Department.

Medical Department.

Industrial Home School.

Ladies' Academy of the Visitation.

Masonic Library.

Medical Society of District of Columbia.

National Academy of Sciences.

National Association for Support of Destitute Colored Women.

National Deaf Mute College.

National Freedmen's Relief Associat'n.

National Medical College.

ï

Washington_____National Soldiers and Sailors' Orphans'
Home.

National Theological Institute.

National University.

Naval Hospital.

Normal School. (Colored.)

Odd Fellows' Library.

Providence Hospital.

Rittenhouse Academy.

Smithsonian Institution.

St. Ann's Infant Orphan Asylum. St. Joseph's Male Orphan Asylum.

St. Vincent's Female Orphan Asylum.

Territorial Legislature.

Typographical Society.

Union Academy.

U. S. Agricultural Society.

Washington Asylum.

Washington Business College.

Washington City Orphan Asylum.

Washington Library.

Washington Philosophical Society.

Washington Seminary.

Women's Christian Association.

Women's College.

Young Catholic Friends' Society.

Young Men's Catholic Association.

Young Men's Christian Association.

Young Men's Christian Asso'n, (col'd.) Young Men's Hebrew Literary Asso'n.

Zoological Society of Washington.

# FLORIDA.

APALACHICOLA......Chamber of Commerce.
CENTREVILLE......Pisgah High School.
CHATTAHOOCHEE....State Prison.
EAST SUWANEE....State Seminary.
FERNANDINA......St. Mary's Retreat.

# GEORGIA.

GAINESVILLE	East Florida Normal Seminary.
	Young Men's Christian Association
	Library Association.
Knox Hill	_Academy.
MADISON	
	Female Seminary.
Monticello	_Collegiate Institute.
Ocala	_
Pensacola	_Academy.
	Catholic Free School.
	Collegiate Institute.
	Naval Hospital.
	Pensacola Library Association.
	St. Charles Academy.
St. Augustine	Historical Society of Florida.
•	Judicial Library.
TALLAHASSEE	_Academy.
	Leon Lodge Library.
	Rutledge Institute.
	State Library.
	State Seminary.
	West Florida Normal Seminary.
	•

# GEORGIA.

A TI A NTA	Oglethorpe University.
ATMANTA	Phi Delta Society.
	Thalian Society.
	State Agricultural Society.
	Young Men's Christian Association.
•	Young Men's Library Association.
AUGUSTA	-Augusta Public Library.
	Female Seminary.
	Houghton Institute.
	Medical College of Georgia.
	Richmond County Agricultural Society.
	St. Mary's Academy.
	Young Men's Christian Association.
	Young Men's Library Association.
BARNESVILLE	
	Bowdon Collegiate Institution.
CARROLLTON	_Masonic Institute.
CARTERSVILLE	_Young Men's Reading Association.
CASSVILLE	Female College.
	Deaf and Dumb Asylum.
•	Female Seminary.
	Hearn School.
CEDARTOWN	Polk County Farmers' Club.
	Woodland Female College.
COLUMBUS	Female College.
	Female Seminary.
	High School.
	Young Men's Christian Association.
COVINGTON	
	Manual Labor School.
	Masonic Female College.
CUTHBERT.	.Andrew Female College.
	Baptist Female College.
EATONTON	Literary and Theological Seminary.
	Putnam County Agric, and Hortic, Soc'y.
<b>Говзутн</b>	Forsyth Female College.
	Hilliard Malo Institute.
	Monroe Female University.
FORT VALLEY	
	Library of the Supreme Court.
GREENSBOROUGH	
	· • • • • • • • • • • • • • •

GRIPPIN	Bailey Institute.
<del></del>	Female College.
	Martin's Farm School.
	Medical College of Middle Georgia.
HAMILTON	
HEPHZIBAH.	
	Bradwell Institute.
Jepperson	
	Brownwood Institute.
	High School.
	La Grange Female College.
	South Georgia Female College.
LUMPKIN	Masonic Female College.
	Alexander Free School.
	Institution for the Blind.
	Macon Free School.
	Mercer University.
	Theological Department.
	Munroe Library.
	Reform Medical College.
	Wesleyan Female College.
	Young Men's Christian Association.
MADISON	Female Seminary.
	Georgia Female College.
MARIETTA	Female College.
	Military Institute.
MARSHALLVILLE	High School.
MIDWAY	
MILLEDGEVILLE	
	State Library.
	State Prison.
Monbor	
Montpelier	0
	Female Institute.
	Montpelier College.
	Mount Zion Select School.
NEWNAN	College Temple Female College.
Oxford	
	Few Society.
_	Phi Gamma Society.
Penfield	_remale Academy.

PERRY	_Houston Female College.
RANDOLPH	
Rome	Female College.
	Academy of St. Vincent de Paul.
	Chatham Academy.
	Free School.
	Georgia Medical Society.
	Girls' High School.
	Historical Society of Georgia.
	Massic School.
	Oglethorpe Medical College.
	Public School Library.
	Savannah Medical College.
Spalding.	Spalding Seminary.
SPARTA	
	Female Seminary.
STILESBORO	Stilesboro Institute.
TALBOTTON	Academy.
	Female Seminary.
	Collinsworth Institute.
	La Vert (Female) College.
THOMASVILLE	, ,
WALTHOURVILLE	Academy.
WEST POINT	
WYNTTON	
	Georgia Academy for the Blind.
	9

# 1DAHO.

Boise City.... Territorial Agricultural Society.

# ILLINOIS.

ABINGDON	_Abingdon College.
	Central Illinois Female College.
Addison	-Collegiate Institute.
	German Evangelical Lutheran School.
ALBION	Edwards Co. Agric. and Indust. Society.
ALEDO	_Mercer Collegiate Institute.
	_Alton Library Association.
	Alton Polytechnic Institute.
•	Horticultural Society.
	Literary and Historical Society.
	St. Mary's Ursuline Academy.
	Theological and Literary Seminary.
Anna	Southern Illinois Insane Hospital.
	Farmers and Fruit-growers' Club.
	Philo-Franklin Literary Society.
ATLANTA	
	Union Agricultural Society.
AURORA	Aurora Library Association.
	Jennings Seminary.
	Literary and Historical Society.
	Young Men's Christian Association.
BARRINGTON	
	St. Francis Xavier Academy.
	Academy Immaculate Conception.
	German Library.
	St. Clair Co. Agric. and Mech. Society.
BELVIDERE	Boone County Agricultural Society.
	Female Seminary.
	Library Association.
Benton	
BLANDINVILLE	
BLOOMINGDALE	
	_(Museum transferred to N. University.)
	Bloomington Female College.
	Bloomington Female Seminary.
	Home for the Friendless.
	Illinois Wesleyan University.
	Belles Lettres Society.
	Munsellian Literary Society.
	•

BLOOMINGTON ..... Library Association. Major's Female College. Odd Fellows' Library Association. Young Men's Christian Association. BOURBONNAIS GROVE St. Viatur's College. Brickton ____Academy. BUNKER HILL ____Horticultural Society. Library Association. BUSHNELL .... Public Library. Cairo _____Academy of Loretto. Public School Library. St. Joseph's Seminary. Young Men's Christian Association. CAMBRIDGE _____Henry County Agricultural Society. CANTON.....Canton College. Library Association. CARBONDALE ____Adelphian Literary Society. Library Association. Southern Illinois College. South. Illinois Nor. University, (State.) Young Men's Christian Association. CARLINVILLE ..... Anderson Female Seminary. Blackburn Seminary. Blackburn Theological Seminary. Blackburn University. Macoupin Co. Agric. and Mech. Society. CARLYLE ......Clinton Co. Agric. and Mech. Society. CARROLLTON ...... Greene Co. Agric. and Mech. Society. CARTHAGE ..... Carthage College. CASEYVILLE ____Benevolent Society. CATLIN _____Vermilion Co. Agric. and Mech. Soc'y. CENTRALIA _____Literary and Library Association. CHAMPAIGN .....Champaign Female Seminary. Illinois Industrial University. Savoy Farmers' Club. Coles Co. Agric. and Mechanic. Society. CHESTERFIELD _____Green wood Seminary. Baptist Theological Institute.

Bell's Commercial College.

CHICAGO.....Bennett College of Eclectic Medicine and Surgery.

Board of Education.

Bryant & Stratton's Commercial College.

Chicago Astronomical Society.

Chicago Conservatory of Music.

Chicago Dental College.

Chicago Historical Society.

Chicago Library Association.

Chicago Medical College.

Chicago Theological Seminary.

Christian Brothers' Academy.

College of Pharmacy.

Cook Co. Agric. and Horticult. Society.

Dearborn Observatory.

Dearborn Seminary.

Edinburg University.

Excelsior Society.

Franklin Society.

Hahneman Medical College.

Hathaway's Academy.

High School.

Holy Family Benevolent Society.

Illinois School of Trade.

Industrial School.

Ladies' Baptist Educational Society.

Law Library.

Lincoln Institute.

Literary, Art, and Social Association.

Logicians' Literary Society.

Mechanics' Association.

Mechanics' Institute.

Mutual Benevolent Association.

Normal School.

Palmer's Academy.

People's University.

Presbyterian Theological Seminary of the Northwest.

Public School Library.

Tubilo isolicoi Elorary

Reform School.

Rush Medical College.

St. Ignatius' College. St. Joseph's Academy.

University of Chicago. Law School.

CLAREMONT......Southern Illinois Christian University.
CLINTON ......DeWitt County Agricultural Society.

DECATUR.....Father Matthew Benevolent Society.

De Witt County Seminary.

Seminary of the Sacred Heart. Sloan's Commercial College. State Natural History Society.

Union Catholic Library Association.
University of St. Mary's of the Lake.
Theological Seminary.
Young Men's Association.

Young Men's Christian Association.

Farmers' Club and Mechanics' Institute.

CHICAGO .....St. Francis Xavier's Academy.

Female Seminary. High School. Ladies' Library Association. Macon County Agricultural Society. Macon County Fruit-growers' Associa'n. Male Institute. St. Theresa Academy. DEKALB ..... Agricultural and Mechanical Society. DESoto College. DIXON.....Dixon Collegiate Institute. Dixon Seminary. Lee County Agricultural Society. Dover Academy. DuQuoin ____Female Seminary. Library Association. DWIGHT _____Agricultural Club. EAST CAMBRIDGE ___Furmers and Mechanics' Club. East Paw Paw ..... Seminary. Teachers' Ins. and Classical Seminary. EAST ST. LOUIS.___St. Aloysius' College.

EDWARDSVILLE ..... Agricul. and Mech. Society.

EDGINGTON ....Library.

DANVILLE _____Danville Seminary.

Edwardsville	
	German Agricultural Society.
Elgin	
	Northern Illinois Insane Hospital.
	Seminary.
ELMHURST	Mclancthon Theological Seminary.
ELMORE	_Farmers' Club.
ELMWOOD	Reading and Investigating Society.
EL PASO	_Academy.
ENGLEWOOD	Cook County Normal School.
EUREKA	Eureka College.
	Simpson Sem. and Col. Institute.
EVANSTON	-Evanston Academy.
	Evanston College.
	Evanston Philosophical Association.
	Englewood College and Chic. Female
	University.
	Garrett Biblical Institute.
	Northwestern Female College.
	Adelphic Society.
	Hinman Society.
	Northwestern University.
FAIRFIELD	_Wayne County Agricultural Society.
	_Library Association.
FLORA	_Flora Academy.
FREEBURG	_Sængerbund and Library Association.
FREEPORT	
	Agricultural Society.
	_Agricultural Society.
	_Illinois Soldiers' College.
GALENA	_Agricultural Society.
	Classical Institute.
	Female Seminary.
	Galena Academy.
	Northwestern Ger. Evan. Nor. School.
	Young Men's Christian Association.
GALESBURG	Academy of Music.
	Knox College.
	Adelphi Society.
	Erosophian Society.
	Philomathian Society.
	Zetecalian Society.

GALESBURG .....Knox Ladies' Seminary. Lombard University. Young Men's Library Association. GENESEO _____Augustana College. Theological Department. Geneseo High School. Genesco Seminary. GENEVA......Kane County Agricultural Society. Georgetown ......Georgetown Seminary. GILMAN ....Library Association. GODFREY ..... Monticello Female Seminary. GOLCONDA .....Pope County Agricultural and Horticultural Society. GREENVILLE____Almira College. Bond County Agricultural Society. Ladies' Library Association. GRIGGSVILLE____Circulating Library Association. Seminary. Hamilton ..... Downing Farmers' Club. Warsaw Horticultural Society. HAVANA.....Mason Co. Horticultural Society. HENNEPIN .....Putnam County Agricultural Society. HENRY.____Female Seminary. Henry Female Seminary. North Illinois Institute. HILLSBORO.....Hillsboro College. Montgomery County Agric. Society. HINSDALE ____Academy. Homer ____Seminary. HOWARDSVILLE____Agricultural Society. HOYLETON .....Seminary. HYDE PRAK.....Seminary. IRVINGTON .....Illinois Agricultural College. Jacksonville ____ Illinois College. Phi Alpha Society. Sigma Pi Society. Illinois Conference Female College. Institution for the Blind. Institution for Deaf and Dumb.

Institution for Education of Feeble-

minded Children.

JACKSONVILLE	_Jacksonville Female Academy.
	Morgan Co. Agric. and Mech. Associa'n.
	Odeon.
	State Hospital for the Insane.
	Whipple Academy.
	Young Ladies' Atheneum.
	Young Men's Christian Association.
JERSEYVILLE	• •
	Voung Ladios' Saminam
Joliet	-St. Theresa Select School.
	State Penitentiary.
	Will County Agricultural Society.
Jonesboro	
KANKAKEE	Kankakee Agricultural Society.
	Kankakee University.
	Male and Female Seminary.
KICKAPOO	
KNOVVILLE	Ewing University.
	Theological Department.
	Knox County Agricultural Society.
	Library Association.
LAKE FOREST	Lake Academy.
	University.
LAKE ZURICH	
Lasalle	
	St. Vincent's Academy.
LAWRENCEVILLE	Lawrence County Library.
	_McKendree College.
	Law Department.
	Philosophian Society.
	Platonian Society.
LEE CENTRE	•
	_Cumberland Presbyterian Seminary.
Lewistown	
	Lewistown Library.
LIBERTYVILLE	_High School Library.
	Lincoln University.
Loami	
Lockport	
	Clay County Agric. and Hort. Society.
	McDonough Co. Agricultural Society.
,	

#### ILLINOIS.

MACOMB	McDonough Nor. and Scientific College.
	Cumberland Co. Agricultural Society.
MARION	
	Collegiate Institute.
MARSHALL	Clark County Agricultural Society.
	Marshall College.
	Students' Free Library.
MATTOON	
	Library Association.
	Mendota College.
	Public School Library.
	Wesleyan Seminary.
METROPOLIS	
	Concordia German School Society.
	Monmouth Academy.
	Monmouth College.
	Aletheorian Society.
	Amateurs des Belles Lettres.
	Eccritean Society.
	Philadelphian Society.
	Monmouth Mercantile College.
	United Presbyterian Theological Sem-
	inary of the Northwest.
	Warren Co. Libr'y and Reading-Room.
Morris	Grundy Academy.
	Grundy County Agricultural Society.
	St. Angelos Academy.
	Wabash County Agricultural Society.
MOUNT CARROLL	Carroll County Agricultural Society.
	Mount Carroll Female Seminary.
MOUNT MORRIS	Mt. Zion Male and Female Seminary.
	Rock River Seminary.
MOUNT VERNON	Mount Vernon College.
	Seminary.
Mud Creek	Aloysius Orphan Asylum.
	Library Association.
	Northwestern College.
NASHVILLE	•
	Washington County Agricultural Soc'y.
	Washington County Library.
NEWARK	Fowler Institute.

Normal	_Soldiers' Orphans' Home.
	State Normal University.
	Philadelphian Society.
	Washingtonian Society.
OCONER	Richmond Hall Library.
	_Agricultural and Horticultural Society.
	_Male and Female College.
V #4.	Olney Library.
	Richland County Agricultural Society.
	Seminary.
	Young Men's Christian Association.
Onarga	Grand Prairie Horticultural Society.
	Grand Prairie Seminary.
	Onarga Horticultural Society.
	Onarga Library.
	Presbyterian Institute.
ONEIDA	Literary and Library Association.
	_Henderson County Agricultural Society.
Ottawa	_Academy Natural Sciences.
	LaSalle County Agricultural Society.
	Ottawa Lodge I. O. O. F.
	St. Francis Xavier's Academy.
Oxford	Farmers' Club.
PADDOCK'S GROVE	Farmers' Club, No. 1.
Pana	
Paris	
	Edgar Collegiate Institute.
	Edgar Co. Agric. and Mech. Associa'n.
	Methodist Library.
	Paris Seminary.
	_Augustana College.
Pekin	-American Society Natural Science.
	Tazewell County Horticultural Society.
Peoria	Brimfield Academy.
	Catholic Academy.
	City Library.
	Commercial College.
	County Normal School.
	German Library Association.
	German School Association.
	High School Library.

PEORIA	_Mercantile Library Association.
	Peoria County Agricultural Society.
	Peoria County Horticultural Society.
	Peoria University.
	Wesleyan Seminary.
	Young Men's Christian Association.
PERU	German Library Association.
	Pike County Agricultural Society.
	Pike County Horticultural Society.
	Southwestern Seminary.
Plainfield	Northwestern College.
	Kendall County Agric. and Mech. Soc'y.
	_Polo Library Association.
	_Livingston Co. Agricultural Society.
	State Ref. School for Juvenile Offenders.
PRAIRIE CITY	
	Bureau County Agricultural Society.
	High School.
	Normal School.
•	Young Men's Association.
PRINCEVILLE	Young Men's Christian Association.
Prophetstown	Franklin Institute.
	_Academy of Notre Dame.
•	Adams Co. Agric. and Horticult. Soc'y.
	Female Seminary.
	High School.
	Independent German School Associa'n.
	Manual Labor Institute.
	Quincy Academy.
•	Quincy Horticultural Society.
	Quincy Library.
	Quincy Methodist College.
	Quincy Seminary.
REYNOLDSBOROUGH -	Southern Illinois Seminary.
RICHVIEW	•
RIDGE FARM	Pilot Grove Agricultural Society.
Robin's Nest	Jubilee College.
	_Crawford County Agricultural Society.
	Rock Falls College.
· Rockford	
	Classical High School.

ROCKFORD	Commercial and Mathematical Institute.
,	Female Seminary.
	Public Library.
	Rockford Horticultural Society.
	Winnebago County Agricultural Soc'y.
ROCK ISLAND	Progressive Lyceum.
•	Young Men's Christian Association.
	Young Men's Literary Association.
RUSHVILLE	High School Library.
	Ladies' Seminary.
	Schuyler County Agricultural Society.
SAINTE ANNE	Saviour's College.
SAINT CHARLES	Chiniquay College.
	St. Charles Library.
SALEM	Marion County Agricultural Society.
	South Illinois Female College.
SCALES MOUND	
Shawneetown	Library Association.
SHELBYVILLE	Shelby Male and Female Seminary.
	Shelby Seminary.
	Young Men's Christian Association.
	Randolph County Agricultural Society.
	German Farmers' Club.
Springfield	Bettie Stuart Institute.
	Board of State Com. of Public Charities.
	Geological Survey of the State.
	High School.
	Home of the Friendless.
	Musical Union.
	St. Paul's College.
•	Springfield Library Association.
	State Agricultural Society.
	State Horticultural Society.
	State Library.
	Ursuline Academy.
	Young Ladies' Institute.
	Young Men's Christian Association.
	Randolph Co. Lib. and Historic. Society.
	Literary Association.
	St. Patrick's Academy.
0	Whiteside Co. Agricultural Society.
3	87

SULLIVAN	_Moultrie Co. Agric. and Horticult. Soc'y.
SYCAMORE	
TALLULA	_Union Academy.
TAMAROA	Perry County Agricultural Society.
Teutopolis	_St. Joseph's Ecclesiastical College.
THOMPSON	Academy of the Most Precious Blood.
Toulon	Stark County Agricultural Society.
	Toulon Seminary.
TUSCOLA	_Douglas County Agricultural Society.
UPPER ALTON	
	Alpha Zeta Society.
	Soc'y of Moral and Relig. Inquiry.
	Theological Department.
Urbana	_Champaign County Agricultural Soc'y.
	Seminary.
	Urbana Horticultural Society.
VANDALIA	_Fayette Co. Agric. and Mech. Associa'n.
	Fayette Seminary.
VILLA RIDGE	Horticultural Society.
	Lyceum and Library Association.
Virginia	Cass County Agricultural Society.
	Vincinia Sam of Cumb Drock Church
Warsaw	Hancock Library Association.
	Public School Library.
WATERLOO	_Monroe Co. Agric. and Mech. Society.
WAUKEGAN	
	Lake County Agricultural Society.
Westfield	
	Colomentian Society.
	Philalethean Society.
`	Zetagathean Societya
WHEATON	_Illinois Institute.
•	Wheaton College.
Wilson	_Mt. Zion Academy.
Woodstock	McHenry County Agricultural Society.
	Soldiers' Orphans' Home.
	State Reform School.
	Woodstock University.
WASHINGTON	_Academy.
WARRENVILLE	
WINETKA	_Academy.
WINETKA	_Academy.

## INDIANA.

Ажо	Clay Township Agricultural Club.
Anderson	_Madison County Agricultural Society.
Annapolis	
	-Warren and Fountain Agric. Society.
	_DeKalb County Agricultural Society.
AURORA	Young Men's Christian Association.
	Battle Ground Institute.
Belleville	_Academy.
BLOOMINGDALE	_Academy.
BLOOMINGTON	_Indiana University.
	Athenian Society.
	Philomathean Society.
	Law School.
	Monroe County Agricultural Society.
	Monroe County Library.
Blufton	-Wells County Agricultural Society.
Bourbon	
BREWERSVILLE	_Farmers' Club.
Bridgeport	_Agricultural and Horticultural Society.
	_Iroquois Township Farmers' Club.
BROOKLYN	_Morgan County Agricultural Society.
BROOKVILLE	Brookville College.
Brownstown	Jackson County Library.
	Young Men's Christian Association.
	_Workingmen's Institute.
CENTREVILLE	_Collegiate Institute.
	Wayne Co. Joint Stock Agric. Associa'n.
CHARLESTOWN	English and Classical School.
College Corner	
CONNERSVILLE	Fayette County Joint Stock Agricultu-
	ral and Mechanical Society.
•	Mech. and Workingmen's Institute.
CORYDON	Cone's Seminary.
	Harrison County Agricultural Society.
•	Harrison County Library.
CRAWFORDSVILLE	Montgomery County Agric. Society.
	St. Joseph's Academy.
	Wabash College.
	Calliopean Society.
	Lyceum Society.
	•

CRAWFORDSVILLE...Young Men's Christian Association.
CROWN POINT.....Institute.

Lake County Agricultural Society.

DALE........Pigeon Township Agricultural Society.

DANVILLE......Academy.

Hendricks County Agricultural Society.

McClure Workingmen's Association.

DELPHI.........Young Men's Christian Association.

DUNLAPSVILLE......Presbyterian College.

DUPONT Farmers' Agricultural Society.

Spice Run Farmers' Club.

EVANSVILLE Commercial College

Evansville Commercial College.
Library Association.

Vanderburg Co. Agric. and Hort. Soc'y.
Vanderburg County Library.
Young Men's Christian Association.
FORT WAYNE......Allen County Agric. and Hort. Society.

GOSHEN_____Elkhart County Agricultural Society.
Union School.
GRANT_____Grant County Library.

Female Institute.
Indiana Asbury University.
Law Department.

GREENCASTLE_____Asbury Female Seminary.

Philological Society.
Platonean Society.
Putnam County Agricultural Society.

Young Men's Christian Association.

GREENSBURG......Decatur County Agricultural Society.
Public Library.

	Farmers and Mechanics' Club.
HANOVER.	_Hanover College.
	Philalethean Society.
	Society of Religious Inquiry.
	Union Literary Society.
	Mechanics' Library.
	Young Men's Christian Association.
HARTSVILLE	Hartsville University.
Howard	Young Men's Christian Association.
	Huntington County Agricultural Soc'y.
Indianapolis	_City Training School.
•	Female Institute.
	High School.
	Historical Society.
•	Hospital for Insane.
	Indiana Medical College.
	Indiana Pharmaceutical Society.
	Indiana Ref. Inst. for Women and Girls.
	Indianapolis Library Association.
	Institution for Blind.
	Institution for Deaf and Dumb.
	Marion Co. Agric. and Hort. Society.
	Marion County Library.
	Northwestern Christian University.
	Athenian Society.
•	Mathesian Society.
	Philokurian Society.
	Pythonian Society.
	St. Mary's Academy.
	State Board of Agriculture.
	State Library.
	Young Men's Christian Association.
	_Jarvis Agricultural Society.
JEFFERSONVILLE	
	Young Men's Christian Association.
Knightstown	-Academy and High School.
	Soldiers' and Orphans' Home.
Кокомо	
	Periclean Society.
	Platonean Society.
	Sigournean Society.
	Howard County Agricultural Society.

LAFAYETTE.....Farmers' Institute. High School. St. Ignatius Academy. State Agricultural College. Young Men's Christian Association. LA GRANGE....La Grange Agricultural Society. LANCASTER .... Eleutherian College. LA PORTE....Indiana Medical College. La Porte County Agricultural Society. La Porte Co. Hort. and Pomol. Soc'y. McClure Workingmen's Library. Natural History Association. St. Rosa's Academy. LAWRENCEBURG ____Dearborn County Agricultural Society. Public Library. St. Lawrence Academy. LEXINGTON.....Scott County Library. LIBERTY.....Union County Joint Stock Agric. Soc'y. LOGANSPORT _____Academy of the Holy Angels. Ladies' Sigourney Library. McClure Workingmen's Library. Seminary. Smithson College. MADISON .... Jefferson County Agricultural Society. Library Association. Madison Horticultural Society. . MANCHESTER____Academy. MARION .....College of Indiana. Grant County Agricultural Society. MEROM.....Union Christian College. METAMORA.....Farmers' Club. Michigan City____St. Ambrose Academy. State Prison. MISHAWAKA ..... Mishawaka Institute. St. Joseph County Agricultural Soc'y. Young Men's Christian Association. Monrovia ......Pioneer Farmers' Club. Moore's Hill.....Collegiate Institute. Moore's Hill College. Mooresville.....High School.

MUNCIE_____Delaware County Agricultural Society.

Muncierown	_Workingmen's Library.
NEW ALBANY	
21211 112011111111111	Indiana Asbury Female College.
	St. Mary's Academy.
	Society of Natural History.
	Theological Seminary.
	Young Men's Christian Association.
N Cinter	New Carlisle Institute.
New Castle	
NEW CASILE	Henry County Agricultural Society.
Y C	Henry County Horticultural Society.
	_Ridgeville College.
NEW HARMONY	
	Posey County Agricultural SocietyHoney Creek Agric. and Hortic. Soc'y.
	.Academy of the Assumption.
	_Vermillion County Agricultural Society.
	Geneva Farmers' Club.
Notre Dane	St. Mary's Academy.
	University of Notre Dame.
	Busseron Agric. and Horticult. Society
	Academy of the Immac. Conception.
	_Northeast Indiana Literary Institute.
	Ripley County Agricultural Society.
	Bethlehem Union Club.
OWENSVILLE	
	_Workingmen's Institute.
Paris	-Hopewell Agricultural Society.
	Marion Farmers' Club.
	Paris Agricultural Society.
Peru	_Peru Institute.
	Young Men's Christian Association.
PINE VILLAGE	Grand Prairie Agricultural Society.
PLAINFIELD	_House of Refuge.
	Library Association.
	Plainfield Horticultural Society.
PORTLAND	_Liber College.
PRINCETON	
	Gibson County Agric. and Hort. Soc'y.
	Gibson County Library.
QUAKER HILL	Quaker Point Farmer's Club.
<b>V</b>	• · · · · · · · · · · · · · · · · · · ·

RICHMOND	Farlham Collage
AUCHMOND	Friends' Academy.
	Manual Labor and Workingmen's Inst.
	Morrison Library.
	Young Men's Christian Association.
Doggana	
	Fulton County Agricultural Society.
MOCKPORT	Collegiate Institute.
Doggerser	Spencer Co. Agric. and Hort. Society.
	Parke County Library. Fairview Seminary.
RUSHVILLE	Rush County Agricultural Society.
Garam Maraman	LSt. Meinrad College.
SAINT MEINEAD SAINT MARY'S OF TE	
	St. Mary's Academy.
SAINT PETERS	
SLATE	Jackson County Agricultural Society.
South Bend	
	McClure Workingmen's Institute. Young Men's Christian Association.
Spencep	Owen County Agricultural Society.
	Collegiate Institute.
	Sullivan County Agricultural Society.
DULLI VAN	Sullivan County Library.
SUNMAN	Agric., Horticult., and Pomol. Society.
Tell Cory	Agricultural and Horticultural Society.
TERRA HAUTE	
TEMBA HAUTE	Classical Academy.
•	Farmers and Fruit-growers' Club.
	Female Seminary.
	Horticultural Society.
	McClure Workingmen's Institute.
	St. Mary's College.
	State Normal School.
TIPION	Tipton County Agricultural Society.
Valparaiso	
	Male and Female College.
	Porter County Agricultural Society.
	St. Paul's High School.
Vernon	_Jennings Academy.
	Jennings County Agricultural Society.

Vevay	Switzerland and Ohio Co. Agric. Soc'y.
VINCENNES	Catholic Diocesan Library.
	Knox County Agricultural Society.
	Public Library.
	St. Gabriel's College.
	Vincennes University.
	Workingmen's Institute.
WABASH	McClure Mechanics' Institute.
	Wabash County Agricultural Society.
Warsaw	Kosciusco County Agricultural Society.
	Kosciusco County Horticultural Soc'y.
	Kosciusco Co. Hort. and Pomol. Soc'y.
WAVELAND	Collegiate Institute.
WHITCOMB	Franklin County Agricultural Society.
WINCHESTER	Randolph County Agricultural Society.
Wirt	Indiana Teachers' Seminary.

# INDIAN TERRITORY.

ARMSTRONG _____Academy.

Kemp's Ferry ____Attorney General's Library.

Talequan ____School.

# IOWA.

ADEL	_Dallas County Agricultural Society.
APTON	Union County Agricultural Society.
	Union Farmers' Club.
Albia	Lyceum.
	Monroe County Agricultural Society.
	Kossuth County Agricultural Society.
	Agricultural Society.
	State Agricultural College.
	_Farmers' Association.
	_Jones County Agricultural Society.
	_Jackson County Farmers' Club.
BARTLETT	_Bartlett Farmers' Society.
	Taylor County Agricultural Society.
Bellevue	Jackson County Farmers and Fruit-
	growers' Club.
Ветниенем	-Farmers' Club.
BLOOMFIELD	Davis County Agricultural Society.
Brooklyn	Poweshiek County Agricultural Society.
Burlington	Burlington University.
•	Des Moines County Agricultural Soc'y.
	Iowa Historical and Geological Inst.
CEDAR FALLS	Literary Institution.
CEDAR RAPIDS	Young Men's Christian Association.
CENTREVILLE	Appanoose County Agricultural Soc'y.
CHARITON	Freeland Farmers' Club.
	South Prairie Farmers' Club.
CHARLES CITY	Floyd County Agricultural Society.
CLARINDA	_Page County Agricultural Society.
	Southwestern Horticultural Assoc'n.
CLARKSVILLE	_Farmers' Club.
CLINTON	_Young Men's Christian Association.
	Young Men's Literary Association.
CORYDON	Wayne County Agricultural Society.
COUNCIL BLUFFS	Young Men's Christian Association.
	Institution for the Deaf and Dumb.
Cresco	_Howard County Agricultural Society.
DAVENPORT	Academy Natural Sciences.
	Academy of the Immac. Conception.
	•

_	
DATENTORY	Blue Grass Frances' Society.
	City Training School.
	Griswold College.
	Theological Department.
	Seminary of the Immac. Conception.
	Scott County Agricultural Society.
	Winfield Farmers' Club.
•	Young Men's Christian Association.
	Young Men's Literary Association.
	_Norwegian Luther College.
DENISON	_Crawford County Agricultural Society.
DENMARK	_Denmark Academy.
Denver	_Farmers' Club of Jefferson.
DES MOINES	_Des Moines Library Association.
	Des Moines University.
	Parson's College.
	St. Ambrose Academy.
	State Agricultural Society.
	State Horticultural Society.
	State Library.
DE WITT	_St. Joseph's Academy.
	_Bishop Lee Seminary.
	Dubuque County Agricultural Society.
	Dubuque County Farmers' Club.
	Dubuque Library.
	German Theological Seminary, (Pres.)
	Iowa Institute of Science and Arts.
	Mt. St. Bernard's Theological Seminary.
	St. Joseph's Convent School.
	St. Mary's Convent School.
	Young Men's Christian Association.
	Young Men's Literary Association.
DURANT	_Fulton Farmers' Club.
	_Franklin Farmers' Club.
FAIRFIELD	
	Jefferson County Agricultural Society.
	Jefferson County Library Association.
FAYETTE	_Upper Iowa University.
FONTENELLE	_Adair County Agricultural Society.
	Richland Farmers' Club.
FORT DODGE	_Public Library.
	Webster County Agricultural Society.

FORT MADISON	Statt Prison.
	_Farmers' Boys' Agricultural Society.
	_Iowa Soldiers' Orphans' Home.
	_Grandview Academy.
GRINNELL	
	Guthrie County Agricultural Society.
HAMIN GROVE	_Audubon County Agricultural Society.
TARDON	_Franklin County Agricultural Society.
Homestead	
U OPERATOR	Lenox Collegiate Institute.
To A	Ida County Agricultural Society.
1DA	
T	Maple Valley Farmers' Club. Buchanan County Agricultural Society.
INDIANOLA	Simpson Centenary College.
	Warren County Agricultural Society.
- ~	White Oak Point Agricultural Society.
IOWA CITY	_Iowa State University.
•	Academical Department.
	Law Department.
	Medical Department.
	Normal Department.
	Johnson County Agric. and Mech. Soc'y.
	Johnson County Fruit-growers' Assoc'n.
	St. Agatha's Academy.
	State Historical Society.
Keokuk	_Academy of the Sisters of Charity.
	College of Physicians and Surgeons.
	Keokuk Horticultural Society.
	Library Association.
Keosauqua	_Library Association.
Knoxville	Marion County Agricultural Society.
LANSING	German Agricultural Society.
LE CLAIRE	_Library Association.
LEON	_Decatur County Agricultural Society.
	Clay Farmers' Club.
	_Boyer Valley Farmers' Club.
	Harris Crows Manmons! Club
LOTT'S CREEK.	Farmers' Club of Humboldt.
	Humboldt County Agricultural Society.
Low Moor	Farmers' Club and Library Association.
	Clinton County Agricultural Society.

Lyons.	Deep Creek Farmers' Club.
	Lyons Female College.
	Young Men's Association.
Manchester	
•	Delaware County Agricultural Society.
MAQUOKETA	_Jackson County Agricultural Society.
MARENGO	_Iowa County Agricultural Society.
Marshalltown	_Marshall County Agricultural Society.
	Marshall County Horticultural Society.
Mason City	Cerro Gordo County Agricultural Soc'y.
MAYSVILLE	_Farmers' Club.
	Boone County Agric. and Hortic. Soc'y.
MITCHELL	Mitchell County Agricultural Society.
Monticello	Farmers and Mechanics' Club.
	Monticello Library.
	Scotch Grove Agricultural Society.
MOUNT AYR	Ringgold County Agricultural Society.
MOUNT PLEASANT	Asylum for Insane.
	Female Seminary.
	Henry County Agricultural Society.
1	Iowa Wesleyan University.
	Hamline Society.
	Law Department.
	Pharmacy Department.
	Philomathean Society.
	Ruthian Society.
	Theological Department.
	Library Association.
	Progressive Farmers' Club.
Mount Vernon	_Cornell College.
	Young Men's Christian Association.
	_Clayton County Agricultural Society.
	_Story County Agricultural Society.
NEWBERN	
NEW HAMPTON	_Chickasaw County Agricultural Soc'y.
NEWTON	_Jasper County Agricultural Society.
	_Union Township Farmers' Club.
	_Cedar Valley Seminary.
	_Clarke County Agricultural Society.
Oskaloosa	_Mahaska County Agricultural Society.
	Oskaloosa College.

Oswego _____Jefferson Agricultural Society. OTTUMWA.....Richland Farmers' Club. Pella ..... Central University of Iowa. PROMISE CITY......Farmers' Agric. Society of Southport. QUINCY.....Adams County Agricultural Society. REEDER'S MILLS ..... Farmers' Club of Jefferson. Rock Grove ..... Agricultural and Horticultural Club. SALEM ..... Farmers' Club. State Reform School. Whittier College. SAND Springs..... Mount Pleasant Agricultural Club. SANDYVILLE.....Belmont Agricultural Society. Locust Grove Farmers' Club. SIDNEY .....Frémont County Agricultural Society. Springvale.....Humboldt College. St. SEBALD......Wartburg Seminary. Tabor College. Tabor Literary Institute. TAMA CITY ...... Tama County Agricultural Society. TIPTON ____Cedar County Agricultural Society. VINTON....Benton County Agricultural Society. Institution for Education of the Blind. WAPELLO _____Louisa County Agricultural Society. Washington County Agric. Society. Washington Institute. WATERLOO .....Black Hawk County Agric. Society. Young Men's Christian Association. WAVERLY.....Bremer County Agricultural Society. Webster Crry ..... Hamilton County Agricultural Society. WESTERN ..... Western College. WEST LIBERTY.....Union District Agricultural Society. WEST POINT....Lee County Agric. and Hort. Society. Union Literary Society. WEST UNION ..... Fayette County Agricultural Society. WILTON _____Osage Farmers' Club. Sugar Creek Farmers' Club.

Wilton Seminary.
WINTERSET _____Madison County Agricultural Society.

YORK PRAIRIE ..... Springfield and Inland Club.

### KANSAS.

ATVIRTEON	St. Benedict's College.
	St. Scholastica's Academy.
BALDWIN CITY	
	Osage County Agricultural Society.
	Agric., Hort., and Mech. Society.
CENTRALIA	Controlic College
Crysman	Farmers and Mechanics' Association.
	Cherokee County Agricultural Society.
	Morris County Farmers' Club.
	State Normal School.
	Central Agric. and Horticult. Society.
	Hooper Farmers' Club.
FORT SCOTT	Agricultural and Horticultural Society.
	Fort Scott Institute.
GARDNER	
	Geneva Presbyterian Academy.
	Hartford Collegiate Institute.
	Waubaunsee Co. Agricultural Society.
	Brown County Agricultural Society.
HIGHLAND	Highland University.
IRVING	Irving College.
	Wetmore Institute.
Lawrence	Catholic Academy.
	Classical and English High School.
	Douglas County Agricultural Society.
LEAVENWORTH CITY	•
•	
	•
	•
	Melcandio Library,
Leavenworth City	Kansas Historical Society. Polytechnic Association. State Horticultural Society. University of Kansas.

LEAVENWORTH CITY	_St. Mary's Academy.
	State Normal School.
	State Prison.
	Young Men's Christian Association.
LECOMPTON	Lane University.
MANHATTAN	State Agricultural College.
	Young Men's Christian Association.
MARYSVILLE	Agricultural and Mechanical Society.
OLATHE	Agric, and Mechanical Association.
	Asylum for Deaf and Dumb.
Ossawatomie	Crescent Hill Agricultural Society.
	Kansas Insane Asylum.
	Ossawatomie Agricultural Society.
Oswego	
Ottawa	Franklin County Agricultural Society.
	Ottawa University.
	Western Christian University.
	_Miami County Agricultural Society.
Springdale	Farmers' Club.
TOPEKA	.Diocesan Female Seminary.
	Euclid Academy.
	Kansas Natural History Society.
	Lincoln High School.
	Seminary of the Assumption.
	Shawnee County Agricultural Society.
•	State Agricultural Society.
	State Library.
	Topeka College.
	Washburn College.
	Western Business College.
TROY	Doniphan County Agricultural, Horti
	cultural, and Mechanical Associa'n.
	Agric., Hortic., and Mech. Association.
WYANDOTTE	Institution for the Blind.
	Wyandotte Library Association.

## KENTUCKY.

Augusta	
BARDSTOWN	Nelson County Agricultural Society.
	Nazareth Academy.
	St. Joseph's College.
	Junior Students' Library.
	Sophoporan Society.
	Students' Library.
	St. Joseph's Ecclesiastical Seminary.
Berea	Berea College.
	Normal Department.
Bethel	High School.
Bethlehem	
BLENDON	Central College.
Bowling Green	St. Columba's Female Academy.
	Southern College.
	S. Kentucky Fruit-growers' Society.
	Warren Co. Agric. and Mech. Associa'n.
CARBOLLTON	.Academy.
	Junior Literary Society.
	Mountain Literary Association.
CEDAR GROVE	
	Mt. St. Benedict's Female Academy.
CEDARSVILLE	St. Joseph's Female Academy.
COLUMBIA	High School.
	Talbot Library.
COVINGTON	Academy of the Mother of God.
	Franklin Library.
	La Salette Academy.
	St. Aloysius Academy.
	St. Walberg's Academy.
	Young Men's Christian Association.
CYNTHIANA	Harrison Co. Agricultural and Mechan-
	ical Association.
DANVILLE	Centre College.
	Institution for Deaf and Dumb.
	Manual Labor College.
	Theological Seminary.
DRENNON SPRINGS	Western Military Institute.
4	88

ELIZABETHTOWN ..... Bethlehem Female Academy. Cecil College. ELECTION .....Green River Academy. FARMDALE.....Kentucky Military Institute. FISHERSVILLE ____Academy. FLEMINGSBURG ____Fleming County Seminary. FRANKFORT .....Catholic Boarding School. Female Institute. High School. Institute for Feeble-minded Children.

Kentucky Institution for Blind. State Agricultural Society.

State Library. State Prison.

Georgerown _____Female College. Female Collegiate Institute.

> Adelphi Society. Ciceronian Society. Tau Theta Kappa Society.

Scott Co. Agric. and Mech. Association. Western Baptist Theological Institute.

GETHSEMANE ......Mt. Olivet Academy. GLASGOW _____S. Kentucky Fair Ground Association.

Georgetown College.

Urania College. GREENEVILLE ____Female Academy.

Presbyterian College. GREENEVILLE SPRINGS Normal School.

The Daughters' College.

HARDINSBURG......Mt. Alba Female College. HARRODSBURG____Bacon College.

Kentucky College.

HARTFORD ____Seminary.

HUSTONVILLE ..... Christian Academy.

HOPKINSVILLE ____Library Association.

Western Lunatic Asylum.

LEBANON ..... Calvary Female Academy.

Female Seminary. St. Augustine's Female Academy.

St. Mary's College.

LEGRANGE...... Masonic College.

LEXINGTON ......Academy of the Holy Rosary.

Eastern Lunatic Asylum.

Eclectic Institute.

Farmers' Club of Central Kentucky.

Hocker Female College.

Kentucky Agric. and Mech. Associa'n.

Kentucky University and State Agricul-

tural College.

Agric. and Mech. Department.

Commercial College.

Law Department.

Military Department.

Medical Department.

College of the Bible.

Lexington City Library.

Normal School.

St. Boniface Academy.

St. Catherine's Academy.

Ursuline Academy.

Young Men's Christian Association.

LOUISVILLE .... Ely Normal School.

Female College.

Franklin Literary Association.

House of Refuge.

Institution for the Blind.

Kentucky Historical Society.

Kentucky Horticultural Society.

Kentucky School of Medicine.

Louisville College of Pharmacy.

Louisville Library.

Louisville Medical College.

Mercantile Library Association.

Presentation Female Academy.

Public School Library.

St. Aloysius' Free School.

St. John's Free School.

St. Patrick's Free School.

S. W. Agric. and Mech. Association.

University of Louisville.

Law Department.

Medical Department.

Louisville	_Young Men's Christian Association.
	Young Men's Christian Assoc'n, (Ger.)
LOVETTS	_Lovett's Female Academy.
MAYSVILLE	_Catholic Boarding School.
	Female Institute.
	Maysville Library.
	Odd Fellows' Library.
MILLERSBURG	_Collegiate Institute.
	Methodist College.
Mobganfield	St. Vincent's Female Academy.
Mt. Calvary	Female Academy.
MOUNT STERLING	_Atheneum and Library Association.
	Odd Fellows' Library.
NAZARETH	Academy.
NEWCASTLE	Henry Female College.
	Academy of the Immac. Conception.
	St. Stephen's Academy.
Owensboro	St. Francis Female Academy.
OWENSVILLE	Academy.
PADUCAH	_Library Association.
	McCracken Co. Agric. and Mech. Ass'n.
	Mechanics' Institute.
	Paducah College.
	St. Mary's Female Academy.
	Young Men's Christian Association.
Paris	Bourbon County Agricultural Society.
	Literary and Scientific Association.
	Seminary.
	Madison County Library.
Rochester	
RUSSELLVILLE	
	Theological School.
	Underwood Library.
SHELBYVILLE	Diocesan Theological Seminary.
	Kentucky Female College.
	Shelby College.
	Observatory.
	Phi Mu Society.
	Shelby Co. Agric. and Mech. Associa'n.
	Young Men's Christian Association.
St. Catherine's	

STANFORD.....Lincoln County Farmers' Club.

STAMPING GROUND...Male Academy.

Female Academy.

VERSAILLES.......Woodford Co. Agric. and Mech. Assoc'n.

WINCHESTER.......Clark County Agricultural Society.

#### LOUISIANA.

ALEXANDRIA......Female Academy. Male Academy. ALGIERS Public School. AMITE CITY...... Male and Female Seminary. ARCADIA.....Peabody Free Institute. BALIZE ..... Association of Pilots. BASTROP.....Male and Female Academy. Normal Department. BATON ROUGE.____Academy. Baton Rouge College. College of St. Peter and St. Paul. Deaf and Dumb and Blind Asylum. Louisiana State Seminary and Military Academy. Male Institute. Readville Seminary. State Fair Association. State Library. State Penitentiary. State University. BAYOU SARA ..... Peabody Free School. Belleview Library. Bouligny ..... St. Vincent's Academy. Bringiers ____Bacon College. Jefferson College. CARROLLTON _____Jefferson Public School. St. Mary's (Catholic) School. CASTLETON ____Academy.

Louisiana Insane Asylum.

CLINTON.....Central Free School.

CLINTON.....Masonic Male College. Silliman Female College. Normal Department. Columbia ..... Peabody Free Academy. Covington _____Academy. Female Seminary. DE Soro ..... Pierce and Payne College. Donaldsonville.....Catholic Academies. E. FELICIANA POINT_Clinton Academy.

FAIRFIELD..... St. Vincent's Academy. FARMERVILLE ....... Academies, Male and Female

Franklin.....Catholic Parochial School. Franklinton.....Academy.

Franklinton Collegiate Institute.

GRAND COTEAU.....Academy of the Sacred Heart. Female Seminary.

St. Charles College. GREENSBURG .....St. Helena Academy.

GRETNA .....Free Academy.

HARRISONBURG.....Catahoula Academy. Homer.....Claiborne Academy.

Female College. Preparatory School. Female Seminary. Male College.

Hydropolis.....Female Seminary. Jackson ..... Centenary College of Louisiana. Feliciana Female College Institute.

Insane Asylum. JEFFERSON CITY ____St. Joseph's Select School.

Keachi.....Female Institute.

LA FOURCHE.....Ecc. Seminary of St. Vincent of Paul.

Mansfield .....Female College. MINDEN ____Female College.

Male Academy.

Monroe ...... Agricultural and Industrial Corporation of North Louisiana.

Male and Female Academy.

Montgomery ..... Male and Female Institute, (free.)

MONTPELIER .....Female Seminary.

MOUNT LEBANON .... Female Institute.

Mt. Lebanon University.

NATCHITOCHES .... Academy.

St. Joseph's Collego.

NEW ORLEANS ...... Academy of the Holy Angels.

Academy of the Sacred Heart.

Academy of Sciences.

Asylum for Destitute Orphan Boys.

Asylum for Little Sisters of the Poor.

Beauregard Asylum.

Benevolent Association of Sons of La.

Board of Directors City Schools.

Board Directors Episcopal Schools.

Board Directors German Asso. Schools.

Board Directors Presbyterian Schools.

Board of Trustees of Peabody Acade-

mies and Model Schools.

Boston Club.

Catholic Industrial School.

Catholic Institute.

Catholic Male Orphan Asylum.

Cenas's (Mad) Boarding School.

Central High School.

Chalmette Club.

Chamber of Commerce.

Charity Hospital.

City Hospital.

City Lyceum Library Society.

Classical and Commercial School.

Clerks' Benevolent Association.

Club Louisianais.

College of New Orleans.

College of the Immaculate Conception

Commercial and Classical Academy.

Conservatory of Music.

Convent of Mercy.

Daron Institute.

Dental College.

Evangelical Lutheran Cong. School.

NEW OBLEANS.... _Evangelical Lutheran School.

Female Orphan Asylum.

Female Orphan Asylum of our Lady of Mt. Carmel.

First German Protestant School.

Fisk Free Library.

Free Academy. German Association.

German Brotherhood.

Germania Club.

German Emigrant Aid Society.

German Evangelical Protestant School.

German Mechanics' Association.

German Protestant Asylum.

German Society.

Girard Asylum.

Girls' High Schools, (2.)

Greek and Slavonic Association.

Hayes' Home of Health.

Hebrew Educational School.

Hibernian Benevolent Association

Home for the Aged and Infirm.

Hospital de la Saint Famille.

House of the Good Shepherd.

House of Refuge, (Boys.) House of Refuge, (Girls.)

Howard Benevolent Association.

Indigent Colored Orphan Asylum.

Insane Asylum.

Italian Society. Jackson Benevolent Association.

Jefferson Academy.

Jesuit's College. Jewish Widows and Orphans' Asylum.

La Fourche and Bayou Sara Pilot's

Benevolent Association.

Lavender Academy.

Law Library Association.

Leland University.

LeRoy Female Collegiate Institute.

Locquet Institute for Young Ladies.

New Orleans .....Louisiana Benevolent Association.

Louisiana Retreat, (Insane Asylum.)

Lutheran Benevolent Society.

Lyceum Library.

Male Orphan Asylum.

Mechanical and Agricultural Associa-

Mechanics' Institute.

Mechanics' Society Library.

Medical Association of New Orleans.

Medical College.

Mercantile Library Association.

Merchants' Exchange.

Military High School.

Mt. Carmel Asylum.

Mt. Carmel Convent.

New Lusitanos Benevolent Associa'n.

New Orleans Dental College.

New Orleans School of Medicine.

New Orleans Typographical Union.

Olmstead High School.

Orleans Female Institute.

Peabody State Normal Seminary.

Poydras Female Orphan Asylum.

Protestant Orphan Home.

Providence Asylum, (Colored.)

St. Aloysius' Academy.

St. Aloysius Literary Association.

St. Alphonsus School.

St. Ann's Asylum.

St. Elizabeth Orphan Asylum.

St. Francis' Academy.

St. John's Parochial School.

St. Joseph Convent.

St. Joseph Orphan Asylum.

St. Joseph's Parish School.

St. Mary's Academy.

St. Mary's College.

St. Mary's Dominican Convent.

St. Mary's Orphan Boys' Asylum.

St. Mary's School.

New Obleans ____St. Patrick's Orphan Asylum.

St. Patrick's School.

St. Paul's School.

St. Peter's School.

St. Simeon's Select School.

St. Veronique Benevolent Society.

St. Vincent's Academy.

St. Vincent de Paul School.

St. Vincent's Half Orphan Asylum.

St. Vincent's Home for Boys.

St. Vincent's Infants' Asylum. School of the Holy Trinity Church.

Society Alsac, et Lor. de Bienf. Mut.

Society Franc. de bienf, et d'ass. mut.

Society Ital. di mut. benef. South Agricultural Society of La.

Southern Methodist High School.

Stamps Female Academy.

State Normal School.

Straight University.

Medical Department

Normal Department

Theological Department.

Swiss Benevolent Association.

Sylvester Larned Institute.

Thomson Biblical Institute.

Trinity Benevolent Association.

Trinity High School.

Union Normal School.

United Brothers' Benevolent Associa'n.

University of Louisiana.

Law Department.

Medical Department.

United States Marine Hospital.

Ursuline Academy.

Ursuline Convent.

Washington Benevolent Association.

Widows and Orphans' Home.

Young Men's Benevolent Association.

Young Men's Catholic Friends Society.

Young Men's Christian Association.

NEW ORLEANSYoung Men's Crescent and Star Be-
nevolent Association.
Zion School.
OPELOUSASFemale Seminary.
Franklin College.
Opelousas Academy.
OSYKASilver Creek Agric. and Hort. Society.
Washington Agric. and Hort. Society.
PINE GROVEAcademy.
PINKNEYVILLE Male and Female Academy, (free.)
PINEY WOODSFemale Seminary.
PLAQUEMINEAcademy.
Parochial College.
Pointe CouperPoydras Academy.
Poydras College.
ProvidenceAcademy.
SHREVEPORTFemale Institute.
Male and Female Academy.
University, (Baptist.)
Spring Creek Female Seminary.
SpringfieldFemale Seminary.
St. JamesLouisiana College.
St. MartinvilleAttakapas College or Academy.
TERRE AUX BœursSt. Bernard Academy.
THIBODEAUXMt. Carmel Academy.
Guion I ree Academy.
TRENTON Male and Female Institute, (free.)
UnionFemale Academy.
Union LandingBeechwood Academy.
VermillionvilleAcademy.
Washington College
WinnfieldAcademy, (frec.)

# MAINE.

•	
	Shapleigh and Acton Agric. Society.
	Union High School.
	Young Mon's Christian Association.
Anson	•
	Somerset Academy.
AUBURN	The Edward Little Institute.
	Young Men's Christian Association.
AUGUSTA	Dirigo Business College.
	High School.
	Maine Insane Hospital.
	State Agricultural Society.
	State Board of Agriculture.
	St. Catherine's Hall School.
	State Library.
	Young Men's Christian Association.
BANGOR	Bangor Business College.
	Bangor Commercial Academy.
	High School.
	Horticultural Society.
	Mechanics' Association.
	Mercantile Library Association.
	Sheep-keepers' Association.
	Theological Seminary.
	Society of Inquiry.
	Young Ladies' Academy.
•	Young Men's Christian Association.
Ватн	High School.
	Mechanics' Association.
	Military and Naval Orphan Asylum.
	Patten Library Association.
	Young Men's Christian Association.
_	Young Men's Debating Club.
BELFAST	
	_Titcomb_Academy.
Benton	
	Sebasticook Academy.
	Gould's Classical and English School.
BIDDEFORD	_Biddeford City Library.

61

BIDDEFORD. ..........York Mechanics' Institute. Young Men's Christian Association. BLUEHILL .... Bluehill Academy. Ladies' Circulating Library. Brunswick .... Bowdoin College. Alpha Delta Phi Society. Athenæum. Chi Psi. Delta Kappa Epsilon. Peucinian. Phi Beta Kappa. Psi Upsilon. Historical Society of Maine. Medical School of Maine. Young Men's Christian Association. _East Maine Conference Seminary. Bucksport.... Mechanics' Library Association. Social Library. CALAIS.....Calais High School and Academy. Calais Literary Club. CAMDEN ____Circulating Library. CAPE ELIZABETH .... State Reform School. CASTINE _____Eastern State Normal School. Public Library. CHARLESTON ..... Charleston Academy. CHERRYFIELD......Cherryfield Academy. CHINA.....China Academy. COLUMBIA ..... West Washington Agricultural Society. CORINNA____Social Library. Union Academy. CUMBERLAED CENTRE_Greely Institute. Draigo_____Agricultural Society. Dover Young Men's Christian Association. Eastport____Athenæum. Eastport Library. EAST CHINA .... East China High School.

East Corinth Academy. East Machias ...... Washington Academy.

EAST WILTON.....Farmers and Mechanics' Club. EAST WINTHROP.....Kennebec Co. Agricultural Society.

ELIOT Young Men's Christian Association.

Farmington Academy. First Unitarian Society.

Franklin Co. Agricultural Society. Western State Normal School.

ELLSWORTH......Hancock Agricultural Society.
High School.

Exeren High School.

FARMINGTON......Family School.

Foxceoft Academy.

Houlton Leademy.

ISLAND FALLS......Patten Academy.

KENDUSKEAG BRIDGE_Mercantile Library.

JAY BRIDGE____Library.

Forest Club.

West Penobscot Agricultural Society.

Piscataquis Co. Agric. and Hort. Soc'y. Freedom Academy. FREEPORT Young Men's Christian Association. FRYEBURG.....Fryeburg Academy. West Oxford Agricultural Society. Young Men's Christian Association. GARDINER....Athenæum. Gardiner High School. Ken. Union Agric. and Hort. Society. Lyceum. Mechanics' Association. Young Men's Christian Association. GORHAM.....Gorham Acad. and Ladies' Seminary. Gorham Male Academy. Maine Female Seminary. Young Men's Christian Association. GRAY.....Young Men's Christian Association. HALLOWELL Hallowell Academy and High School. Social Library. Young Men's Christian Association. HAMPDEN CORNER .... Hampden Academy. HARTLAND.....East Somerset Agricultural Society. Hartland Academy. HEBRON......Hebron Academy.

KENT'S HILLMaine Wesleyan Seminary and Female
College.
Calliopean Society.
Kennebunk Circulating Library.
KennebunkportCirculating Library.
LACONIAYoung Men's Christian Association.
LEBANONLebanon Academy.
LEENormal Institute.
LeedsYoung Men's Christian Association.
LEWISTONAndroscoggin Co. Agric. and Hort. Soc.
Androscoggin Natural History Soc'ty.
Bates College.
Theological Department.
Harper Library.
Lewiston High School.
Maine State Seminary.
Young Men's Christian Association.
LIBERTYLiberty Library Association.
LincolnMattanawcook Academy.
LIMERICKLimerick Academy.
LIMINGTONLimington Academy.
LISBON Lisbon Factory Social Library.
LITCHFIELD CORNER_Litchfield Academy.
LITTLE BLUEAbbott Family School.
MachiasSocial Library.
MECHANICS' FALLS Young Men's Christian Association.
Monson Monson Academy.
Monmouth Academy.
New CastleLincoln Academy,
North AnsonAnson Academy.
NORTH BERWICK Circulating Library.
NORTH BRIDGETON North Bridgeton Academy.
NORTH HARPSWELL Harpswell Academy.
NORTH JAYLibrary.
NORTH PARSONFIELD North Parsonfield Academy.
Norway
Norway Liberal Institute.
Oxford County Agricultural Society.
NorridgewockEaton Family School.
Farmers' Club.

Orono	Maine State College of Agriculture and
•	the Mechanic Arts.
ORBINGTON	
	Paris Hill Academy.
	Parsonfield Academy.
PATTEN	
	Penobscot and Aroostook Union Agri-
_	cultural and Horticultural Society.
	_Maine Central Institute.
PORTLAND	_Academy of Notre Dame.
	Athenæum.
	Circulating Library.
	High School.
	Institute and Public Library.
	Me. Charitable Mechanics' Association.
	Mercantile Library Association.
	Portland Business College.
	Portland Riding Academy.
•	St. Dominic's School.
	Society of Natural History.
	Union School.
	Young Ladies' Seminary.
	Young Men's Christian Association.
PRESOUR ISLE	Presque Isle Academy.
READFIELD	_Wesleyan Seminary and Female Coll.
	Richmond Academy.
	Richmond Library Association.
	Young Men's Christian Association.
Robbinston	Lycenm
·	Young Men's Liberal Lib. Association.
Rockland	Athanaum
	High School.
C. cc. pp. pp.	Young Men's Christian Association.
SACO	
DACO	
	Mechanics' Institute.
	York Institute.
~	Young Men's Christian Association.
Skowhegan	
	Skowhegan Library.
	Young Men's Christian Association.
South Berwick	_Berwick Academy.
	South Berwick Library Association.

	_Oxford Normal School and Institute.
	Standish Academy.
STEVENS' PLAINS	Westbrook Sem. and Colleg. Institute.
SUNDERLAND	Young Men's Christian Association.
THOMASTON	_Ladies' Home Library.
	Public Library.
	State Prison.
	Thomaston Academy.
Торенам	Franklin Family School, (for boys.)
	Sagadahoc Agric. and Horticul. Soc'ty.
UNITY	North Waldo Agricultural Society.
	Unity High School.
VASSALBORO	Oak Grove Seminary. Agricultural and Horticultural Soc'ty.
WALDOBORO	Agricultural and Horticultural Soc'ty.
	High School.
WARREN	_Warren Academy.
	_Classical Institute.
	Colby University.
	Delta Kappa Epsilon.
	Erosophian Adelphi.
	Literary Fraternity.
	Zeta Psi.
	N. Kennebec Agricultural Society.
	Waterville Academy.
	Waterville Liberal Institute.
	Young Men's Christian Association.
WESTBROOK	Westbrook Seminary.
	_West Gardiner Academy.
	_Agricultural Society.
	_West Lebanon Academy.
WILTON	
WINTHROP	_Towle Academy.
	Young Men's Christian Association.
Wiscasset	_Social Library.
, - · · · · · ·	Young Men's Christian Association.
YARMOUTH	North Yarmouth Academy.
	Yarmouth Institute.
	Young Men's Christian Association.
5	89

### MARYLAND.

EASTON	Agricultural Society of Eastern Shore.
	Young Men's Christian Association.
ELLICOTT CITY	Patapsco Female Institute.
	Rock Hill College.
	St. Charles College.
	St. Clement's Hall School.
	Young Men's Christian Association.
EMMITTSBURG	
	Students' Library.
•	St. Joseph's Academy.
	St. Mary's Seminary.
FREDERICK	Academy of Visitation.
A MIDMING ILL ILLI	Frederick College.
	Frederick Female Seminary.
	Institution for Deaf and Dumb.
	Young Men's Christian Association.
T . amnonomy	Lutheran Female Seminary.
TAGERSTOWN	Washington Co. Agric. and Mech. Soc'y.
	Young Men's Christian Association.
T	
	Young Men's Christian Association.
	_State Agricultural College.
	Mount St. Clement's College.
LUTHERVILLE	Lutherville Female Seminary.
	Young Men's Christian Association.
	Young Men's Christian Association.
	Mount St. Agnes Academy.
NEW WINDSOR	_Calvert College.
	Social Library.
	-West River Institute.
PIKESVILLE	
	_Hannah More Academy.
ROCKVILLE	Montgomery County Agric. Society.
	Montgomery County Hort. Society.
	Montgomery County Library Assoc'n.
	Rockville Academy.
SANDY SPRING	_Farmers' Club.
	Fulford Female Seminary.
	Library Company.
Upper Marlboro	
	_Shirley Female Institute.
	_Classical Institute.
	Young Men's Christian Association.
	- 0

# MASSACHUSETTS.

AMESBURY	Central Abington Library AssociationAgricultural and Horticultural Society
	Young Men's Christian Association.
AMHERST	Amberst College.
	Observatory.
	Society.
	Hampshire Co. Agricultural Society.
	Massachusetts Agricultural College.
	Mount Pleasant Institute, (for boys.)
ANDOVER	
	Philips Academy.
	Philomathean Society.
	Society of Inquiry.
	Punchard Free School.
•	Theological Seminary.
	Porter Rhetorical Society.
	Society of Inquiry.
Arlington	Cotting High School.
	Public Library.
Ashby	Watatic Academy.
Ashfield	Sanderson Academy.
	Second Social Library.
SHLAND	Young Men's Christian Association.
TTLEBORO	Social Library.
	Young Men's Christian Association.
	Young Men's Christian Association.
UBURNDALE	Auburndale Select Boys' School.
	Lasell Female Seminary.
	Young Men's Christian Association.
Barnstable	Agricultural Society.
	Sturgis Library.
Barbe	Barre Library.
	Young Men's Christian Association.
Bedford	Bedford Library Association.
	Family Boarding School for Boys.
	Young Men's Christian Association.
Belmont	Orchard Hill Family Boarding School for Young Ladies.

BERNARDSTON ..... Cushman Library. Farmers' Club. Goodall Academy.

Powers' Institute. BeverLey.....Public Library.

Young Men's Christian Association. BILLERICA.....Circulating Library.

Howe School. BLANFORD ...... Union Agricultural Society.

Bolton Agric. and Mech. Association.

Houghton High School. Public Library.

Boston ..... Academy of Music. Adjutant General's Library. Amer. Academy of Arts and Sciences.

> American Academy of Dental Science. American Advent Mission Society.

American Association for Advancement of Social Science.

American Baptist Missionary Union.

Amer. Board of Com. Foreign Missions. American Congregational Association.

American Congregational Union.

American Institute of Homeopathy. American Institute of Instruction.

American Education Society.

American Lyceum.

American Otological Society.

American Peace Society. American Statistical Association.

American Tract Society.

American Unitarian Association.

Association for Aged Indigent Females.

Association for Protection of Destitute Roman Catholic Children.

Athenseum.

Austin Circulating Library.

Baldwin P. Home for Little Wanderers. Benevolent Fraternity of Churches.

Bethesda Society.

Board of Agriculture.

Boston..... Board of Education.

Board of Trade.

Boston Acad. of Homeopathic Medicine.
Boston Asylum and Farm School for

Indigent Boys.

Boston Children's Aid Society.
Boston Children's Friend Society.

Boston College.

Boston Commercial College.

Boston Commercial Exchange.

Boston Conservatory of Music.

Boston Dental College.

Boston Dispensary.
Boston District Eclectic Society.

Boston Fatherless and Widows' Soc'ty Boston Highlands Young Ladies' Pri-

vate School.

Boston Homeopathic Society.
Boston Library Society.

Boston Lying-in Hospital.

Boston Marine Society.

Boston Medical Association.

Boston Mutual Benefit Association.

Boston Nautical Academy.

Boston Numismatic Society.

Boston Orthopedic Association.

Boston Port and Seamen's Aid Soc'ty. Boston Port Society.

Boston Soc'ty for Medical Improvement.

Destan Seelter for Medical Observation

Boston Soc'ty for Medical Observation.

Boston Society of Medical Sciences.

Boston Society of Natural History.

Boston Theological Seminary.

Boston Wesleyan Association.

Bowditch Library.

Bowditch School, (girls.)

Bowdoin Literary Association.

Bowdoin School, (girls.) Boylston Medical School.

De la Se la la la la

Boylston Medical Society. Boylston School, (boys.)

_Brimmer School, (boys.) British Charitable Society.

Bromfield Christian Association.

Bryant and Stratton's Business Coll.

Burnham's Circulating Library.

Burns Club. Cape Cod Association.

Carney Hospital.

Catholic Lyceum Association.

Central Cir. Lib., (6 Hamilton place.) Channing Home.

Chapman School, (boys and girls.) Charitable Associa'n of Bost. Fire Dept.

Charitable Irish Society. Chauncy Hall School.

Chess Club.

Children's Home and Home for Aged

Females. Children's Hospital.

Children's Mission to the Children of the Destitute.

Christian Unity. Church Home for Orphan and Destitute

Children. City Hospital.

City Lunatic Asylum.

City Missionary Society.

City Normal School.

Clerical Fund Association, or Society for Relief of Aged and Indig. Clergymen.

Comer's Commercial College.

Comins School. Congregational Library Association.

Congregational Publishing Society.

Dearborn School.

Dental School of Harvard University. Diocesan Parish Aid Society.

Dramatic Fund Association.

Dudley School.

Dwight School.

Consumptives' Home.

Boston.....Eaton's Business College.

Eliot School.

English High School Association.

English High School for Boys, (Bed. st.)

Episcopal City Mission.

Evangelical Baptist Benevolent and

Mission Society.

Evangelical Tract Society.

Everett School.

Eye and Ear Infirmary.

Female Monitorial School.

Female Orphan Asylum.

Franklin Library.

Franklin School.

Franklin Typographical Society.

Free City Hospital.

General Theological Library.

General Theological Diorary.

German Emigrant Aid Society.

Girls' High and Normal School, (W.

Newton st.)

Guardian Society for Friendless Girls.

Haliday's Circulating Library. Hancock School.

Handel and Haydn Society Library.

Harvard Musical Association.

Holbrook Circulating Library.

Tolorook Orichiacing Diorary.

Home for Aged Colored Women. Home for Aged Men.

Homeopathic Medical Dispensary.

Tomoopatuic modicai Dispensary.

House of the Angel Guardian.

House of Correction.

House of the Good Samaritan.

House of Industry and Reformation.

Howard Benevolent Society.

Humane Society of Massachusetts.

Industrial Aid Society for Prevention of

Pauperism.

Infant School Society.

Institute Juvenile Offenders.

Irish Charitable Society.

King's Chapel Library.

Bosron ..... Knights of St. Patrick.

Ladies' American Home Education Society and Temperance Union.

Ladies' Physiological Institute.

Latin School Association.

Latin School, (Bedford st.)

Lawrence School.
Lewis School.

Library of the General Court.

Lincoln School.

Liscom Circulating Library.

Lindsey Circulating Library. Loring's Circulating Library.

Low's Circulating Library.
Lowell Institute.

Lyman School.

Margaret Coffin Prayer Book Society.

Massachusetts Bible Society.

Massachusetts College of Pharmacy.

Massachusetts Charitable Fire Society.

Massachusetts Charitable Mech. Ass'n.

Massachusetts Charitable Society.

Massachusetts Colonization Society.

Massachusetts Cong. Charitable Soc'ty.
Massachusetts Deaf Mute Ch. Union.

Massachusetts Eclectic Medical Soc'ty.
Massachusetts Evangelical Miss. Soc'ty.

Massachusetts Evangelical Miss. Soc'ty. Massachusetts General Hospital. Massachusetts Historical Society.

Massachusetts Home Missionary Soc'ty. Massachusetts Homeopathic Med. Soc.

Massachusetts Homeopathic Med. Soc. Massachusetts Horticultural Society.

Massachusetts Institute of Technology. Massachusetts Medical Society.

Massachusetts Medical Society.

Massachusetts Nautical School.

Massachusetts School for Idiotic and Feeble-minded Youth.

Massachusetts Society for Aiding Discharged Convicts.

Massachusetts Soc'ty of the Cincinnati.
Massachusetts Society for Prevention of

Cruelty to Animals.

Boston.... Massachusetts Society for Promotion of Agriculture.

Massachusetts Tachygraphic Society. Massachusetts Teachers' Association.

Massachusetts Teachers Association.

Massachusetts Temperance Alliance.

Massachusetts Temperance Society.

Massachusetts Total Abstinence Soc'ty.
Massachusetts Total Abstinence Union.

Mattapan Library Association.

Mattapan Library Association Mayhew School.

Mechanic Apprentices' Library Assoc'n.

Medical Library, (36 Temple place.)
Medical School of Harvard University.

Medical and Surgical Institute.

Mendlessohn Musical Institute. Mercantile Library Association.

Methodist Historical Society of N. Eng.

Mount Vernon School for Young Ladies.

Museum of Fine Arts.

Musical Fund Society.

National Ass'n of Wool Manufacturers.

Naval Library and Institute.

Needle Women's Friend Society.

Now Church Free Library.

New England Agricultural Society.

New England Conservatory of Music.

New England Educational Society. New England Female Medical College.

New England Historic Genealogical Soc.

New England Hospital for Women and Children.

 ${\bf New\ England\ Methodist\ Historical\ Soc.}$ 

New England Meth. Education Soc'ty.

New England Moral Reform Society.

New England Numismatic and Archeological Society.

New England Sabbath Association.

New England Shoe and Leather Ass'n. Norcross School.

North Street Union Mission.

To the burdey of the mission.

Notre Dame Academy, (Berkeley st.)

Boston......Notre Dame Academy, (Highlands.)

Orpheus Musical Society.

Parker Fraternity.

Penitent Fomales' Refuge.

Perkins' Institution and Massachusetts

Asylum for the Blind. Phillips School.

Descrit School

Prescott School.

Prince Library.

Prince Society for Mutual Publication.

Prison Discipline Society.

Provident Association.

Public Library of the City.

Quincy School.

Rainsford Island Hospital. Republican Institution.

Rice School.

Sailor's Snug Harbor.

St. Vincent's Orphan Asylum.

Scots' Charitable Society.

Seaman's Friend Society.

Sherwin School.

Shurtleff School.

Social Law Library.

Society of Friends.

Society for Moral and Religious Instruction of Poor.

Society for Prevention of Pauperism.

Soc'ty for Promoting Theolog. Educa'n.

Society for Propagating the Gospel

among the Indians and others in N.

America.

Society for Relief of Widows and Orphans of Deceased Clergymen of the

Protestant Episcopal Church.

State Alms House.

State Library.

Suffolk District Medical Society.

Temple School.

Temporary Home for the Destitute.

Them and Charat Madical Calcal

Tremont Street Medical School.

Trustees of Donations for Education in Liberia. Unitarian Sunday School Society. Universalist Publishing House. Walker's Circulating Library. Washington School. Washingtonian Home. Wells School. Widows' Society. Winthrop School. Wiston Circulating Library. Young Ladies' English and French School, (Pemberton square.) Young Ladies' High School. Young Men's Benevolent Society. Young Men's Christian Association. Young Men's Christian Union. Young Women's Christian Association. Bradford Academy. Female Seminary. Brewster Ladies' Library. Bridgewater Academy. Bridgewater High School. Plymouth County Agricultural Society. State Work House. State Normal School. BRIGHTON......Holton Library. Library Association. Lyceum. Brimfield ....... Hitchcock Free Grammar School. BROOKFIELD.....Merrick Public Library. Young Men's Christian Association. BROOKLINE .....Public Library. BUBLINGTON .... Public Library. Byfield.....Dummer Academy. CAMBRIDGE .....Atheneum. Cambridge High School. Cambridge Lyceum. Classical Institute. Cloverden Observatory

Dana Library.

CAMBRIDGE.... Episcopal Theological School

Harvard College.

Alpha Delta Phi.

Astronomical Observatory. Christian Brethren.

Delta Kappa Epsilon.

Harvard Natural History Society.

Hasty Pudding Club.

Institute of 1770. Lawrence Scientific School.

Law School.

Medical School. Porcellian Club.

Rumford Society.

Theological School. Howard Industrial School.

Museum of Comparative Zoology.

Sever, Francis & Co. Library.

Young Men's Christian Association. CAMBRIDGEPORT ..... Carlton's Circulating Library.

Dana Library.

Irving Literary Association.

Parish Library.

Public Library.

St. Joseph's Lyceum. Young Men's Christian Association.

CHARLESTOWN ____Bowers' Circulating Library.

Bunker Hill Monument Association.

Carlton's Circulating Library.

Devens Benevolent Society. Infant School and Children's Home As-

sociation. Jones Circulating Library.

Public Library of the City. Schrow Circulating Library.

State Prison.

Winchester Home for Aged and Indigent Women.

Young Ladies' Institute.

Young Men's Christian Association. CHATHAM .....Academy.

CHELMSFORD	Farmers and Mechanics' Association.
CHELSEA	Boyden's Circulating Library.
	Orcutt Circulating Library.
	Public Library.
	Union Mercantile School.
	Winnisimmet Literary Institute.
	Young Men's Christian Association.
CHESHIRE	Public Library.
CHESTERFIELD	_Second Social Library.
CHICOPEE	Public Library.
	Young Men's Christian Association.
CLINTON	_Bigelow Library Association.
	Young Men's Christian Association.
CONCORD	Agricultural Society.
	Concord School.
	Farmers' Club.
	Public Library.
CONWAY	•
	Conway Social Library.
	Young Men's Christian Association.
Danvers	Essex County Agricultural Society.
	Farmers' Club.
Dedham	· · · · · · · · · · · · · · · · · · ·
	Norfolk County Agricultural Society.
	Temporary Asylum for Discharged Fe- male Prisoners.
Dumanum	
Deerfield	Deerfield Library.
DIGHTON	
DIGHTON	Public Library.
Donorramen	_Antiquarian and Historical Society.
DORUHESTER	Atherton School.
	Circulating Library.
	Codman Hill School for Young Ladies.
	Dorchester Athensum.
	Everett School,
	Gardner Library Association.
	Gibson School.
	Harris School.
	High School.
,	Mather School.
	MANUAL DUMOVI

DORCHESTER Mattapan Library Association. Minot School. Stoughton School. Tileston School. Union Lyceum. Dudley ...... Nichols Academy. DUXBURY .....Partridge Academy. EAST ABINGDON .....Library Association. Young Men's Christian Association. East Boston .....Adams School. Library Association. Sumner Library. Young Men's Christian Association. EAST BRIDGEWATER__Academy. East Cambridge ____ Young Men's Christian Association. EAST GLOUCESTER ___Young Men's Christian Association. East Hampton.....Farmers' Club. Williston Seminary. Young Men's Christian Association. EAST MEDWAY ____St. Clement's School. EAST SOMERVILLE ___Young Men's Christian Association. East Weymouth .... Young Men's Christian Association. EDGARTOWN ....Library Association. Lyceum. Enfield Library Association. Essex Farmers' Library. Circulating Library. FALL RIVER ____Atheneum. Central Agricultural Society. Holmes Commercial College. Public Library. Young Men's Christian Association. FALMOUTH _____Lawrence Academy. FARMINGTON ...... Young Men's Christian Association. FITCHBURG.....Agricultural Society. Atheneum. Public Library. Young Men's Christian Association.

FOXBORO ......Young Men's Christian Association.

FRAMINGHAM.....Middlesex South Agricultural Society.

Public Library.

	_State Normal School.
FRANKLIN	Dean Academy and Female College.
GARDNER	Young Men's Christian Association.
Georgetown	Agricultural and Social Library.
GLOUCESTER	Citizens' Library Association.
	Lyceum Library.
	Procter's Popular Library.
	Young Mon's Christian Association.
GRAFTON	
•	Young Men's Christian Association.
GRANVILLE CORNERS	
GREAT BARRINGTON.	
	Housatonic Agricultural Society.
	Sedgwick Institute.
	Public Library.
GREENFIELD	
•	Franklin County Agricultural Society.
	Library Association.
	Prospect Hill School for Young Ladies.
	Young Men's Christian Association.
GROTON	Farmers and Mechanics' Club.
	Lawrence Academy.
	Public Library.
HADFIELD	Young Men's Christian Association.
HADLEY	Hopkins Academy.
HANOVER	Academy.
HARVARD	Farmers and Mechanics' Association.
	Public Library.
	Pine Grove Seminary.
HATFIELD	Social Library.
	Young Mon's Christian Association.
HAVERHILL	Athenoum.
,	Circulating Library.
	Essex Northern District Medical Soc'y.
	Mechanics' Institute.
	Young Men's Christian Association.
HEATH	Young Men's Christian Association.
HINGHAM	Derby Academy.
	Public Library.
	Agricultural and Horticultural Society.
HINSDALE	
6	40

82 HINSDALE .....Public Library. HOLDEN _____Farmers and Mechanics' Club. Young Men's Christian Association Holliston ..... Mt. Hollis Seminary. Young Mon's Christian Association. HOLYOKE.....Young Men's Christian Association. HOPKINTON ......Young Men's Christian Association. HUBBARDSTON ...... Public Library. Young Men's Christian Association. HUDSON .... Public Library. HYDE PARK Young Men's Christian Association. IPSWICH_____Ipswich Female Seminary. Jamaica Plain____Bussey Institute. Eliot Library Association. Moss Hill Sominary. LANCASTER....Lancaster Academy. Lancaster Public Library. State Reform School for Girls. LANESBORO.....Elmwood Institute. Public Library. LAWRENCE.....Atlantic Library. Franklin Library. Stratton Circulating Library. Pacific Mills Library. Whitcomb Circulating Library. Whitford & Rice Circulating Library. Young Men's Christian Association. LEE____Farmers' Club. LEICESTER Loicester Academy. Public Library. Young Men's Christian Association. LENOX Lenox Academy. Lenox Library. N.Stockbridge and Lenox Farmers'Club. LEOMINSTER .....Farmers and Mechanics' Club.

Public Library.

LEXINGTON.....Farmers' Club.

Lowell.....City Library.

Young Men's Christian Association.

School for Young Ladies.

Edwards Circulating Library.

Lowell	Middlesex Mechanic Association.
	Middlesex North Agricultural Society.
	Middlesex N. District Medical Society.
	St. Patrick's Academy.
	Washington Athenaum and Lyceum.
	Young Men's Christian Association.
LUNENBERG	
LYNN	Public Library of the City.
	Young Men's Christian Association.
MALDEN	Lunt Circulating Library.
	Young Men's Christian Association.
MANCHESTER	
	_Marblehead Academy.
	Young Men's Christian Association.
MARLBORO	Second Parish Library.
MATTAPOISETT	Barstow School.
Medford	.Tufts' College.
•	Divinity School.
	Tufts' Library.
	Young Men's Christian Association.
	Young Men's Christian Association.
MERRIMAC	Merrimac Academy.
MIDDLEBORO	Boys' Family School.
	Pierce Academy.
	Town Library.
	Young Men's Christian Association.
MILLBURY	
Milford	
	Milford Library.
•	Worcester Southeast Agric. Soc'ty.
	Young Men's Christian Association.
MILTON	
	Milton Academy.
Monson	
	State Alms House.
Nantucket	Agricultural Society.
	Athenæum Library.
NATICK	Public Library.
	Young Men's Christian Association.
	Oakland Hall Institute.
New Bedford	Friends' Academy.

NEW BEDFORD ..... Public Library. Sylvander Circulating Library. Taber Brothers Circulating Library. Young Men's Christian Association. NEW BRAINTREE .... Agricultural Library. NEWBURY.....Dummer Academy. Nowbury Library. NEWBURYPORT ..... Female High School. Public Library of the City. Putnam Free School. West Newbury Farmers' Club. Young Men's Christian Association. New Ipswich Lcademy. Young Men's Christian Association. NEW MARLBOROUGH ... South Berkshire Institute. NEW SALEM ...... New Salem Academy. NEWTON ..... Collegiate Institute. Preston Cottage School. Public Library. Riverside Institute. Young Men's Christian Association. NEWTON CENTRE ..... Family Boarding School for Boys. Newton Theological Institution. NEWTON CORNER ____Young Men's Christian Association. NORTH ADAMS.....Drury Academy. Hoosac Valley Agricultural Society. Public Library. Young Men's Literary Association. NORTHAMPTON......Clarke Institution for Deaf Mutes. Hampshire, Franklin, and Hampden Agricultural Society. Norwood Ladies' Institute. Public Library. Smith Female College. State Lunatic Hospital. Young Men's Christian Association. Young Men's Institute. NORTHBORO .... Public Library. · NORTHBRIDGE ...... Whitinsville Library. NORTH BRIDGEWATER-Hunt's Academy.

Public Library.

NORTH BRIDGEWATER-Young Men's Christian Association.

NORTH BROOKFIELD _Library Association. Lyceum. Theological Seminary. Weeks' Circulating Library. Young Men's Christian Association. NORTH MIDDLEBORO-Pratt Free School. NORTH READING ..... Farmers and Mechanics' Club. NORTH WOBURN ..... New Bridge Social Library. NORTH WRENTHAM __ Farmers' Club. Young Men's Christian Association. NORTON ..... Wheaton Female Seminary OAKHAM.....Young Men's Christian Association. ORANGE.....Young Men's Christian Association. PALMER .... East Hampden Agricultural Society. Public Library. Peabody High School. Peabody Institute. Young Men's Christian Association. Pepperell.....Asylum for Insane. Pepperell Academy. Pepperell Agricultural Library. Petersham ..... Agricultural Library. Highland Institute. PHILLIPSTON .....Free Public Library. PITTSFIELD....Berkshire Agricultural Society. Berkshire Athenæum Library.

Berkshire Medical School.
Carter's Commercial Academy.
Law Library Association.
Maplewood Young Ladies' Institute.
Young Ladies' Seminary.
Young Men's Christian Association.

PLYMOUTH.....Bartlett Circulating Library.
Doten Circulating Library.
Pilgrim Society.
Young Men's Christian Association.

Prospect Hill Gymnasium.

Prospect Hill Gymnasium.

Agricultural Library.

PRINCETON _____Agricultural Library.

Ladies' Circulating Library.

Putnam	Free School.
	_National Sailor's Home.
	Agricultural Library Association.
	Souther Circulating Library.
RANDOLPH	Reading Room Association.
	Young Men's Christian Association.
READVILLE	
	Young Men's Christian Association.
	Rochester Academy.
	_Young Men's Christian Association.
ROXBURY	
	Charitable Society.
	Latin School.
	Mechanics' Institute.
	Roxbury Dispensary.
	Roxbury High School.
	Young Men's Christian Association.
RUTLAND	Farmers' Club.
ItUTLAND	Public Library.
	——————————————————————————————————————
SALEM	Young Men's Christian Association.  Atheneum.
DALEM	
	Beckford Circulating Library.
	East India Marine Society.
	Essox Agricultural Society.
	Essex Institute.
	Essex South District Medical Library.
	Grindall Circulating Library.
	New England Agricultural Society.
	Peabody Academy of Science.
	Salem Charitable Mechanics' Associa'n.
	Salem High and Classical School.
	State Normal School, (for females.)
	Whipple & Smith Circulating Library.
	Young Men's Christian Association.
_	Young Men's Union.
	Young Men's Christian Association.
SANDWICH	Sandwich Academy.
	Pope Circulating Library.
_	Young Men's Christian Association.
SAUGUS	Female Seminary.
	Hawkes Circulating Library.

Saultboro	Dublic Library
	Young Men's Christian Association.
	Stoughtonham Institute.
SHARUN	Checold Andrews
SHEFFIELD	Sheffield Academy.
SHELBURNE FALLS	
~	Shelburne Falls Academy.
SHERBORN	
SOMERVILLE	_McLean Asylum for Insane.
	Young Men's Christian AssociationStafford's Hill Farmers' Club.
	Sheldon English and Classical School.
	Southampton High School.
South Boston	
	School for Idiotic and Feeble-minded
	Youth.
	Young Men's Christian Association.
SOUTHBOROUGH	Farmers' Club.
	Fay Library.
	St. Mark's School.
South Braintree	Hollis Institute.
SOUTH DEERFIELD	_Farmers' Club.
	Young Men's Christian Association.
	_Library Association.
SOUTH HADLEY	_Mt. Holyoke Female Seminary.
	Young Men's Christian Association.
SOUTH READING	Greenwood Seminary.
<b>D</b>	Public Library.
SOUTH SUDBURY	Public LibraryGoodenow Library.
SOUTH WELLFLEET.	Public Library.
	_Young Men's Christian Association.
	Dickinson Academy.
	_Yarmouth Academy.
	_City Library and Museum.
OPAING/IBDD	Hampden Co. Agricultural Society.
	Leavitt, Gillespie & Gilmore Circ. Lib.
	Scientific Society.
	U. S. Armory.
	Young Men's Christian Association.
Comments	Young Men's Christian Association.
DPENUER	Family Reading School
OTERLING	_Family Boarding SchoolBerkshire Family School.
DTOCKBHIDGE	Derashire Family School.

STOCKBRIDGE.....Edwards Place School. Jackson Library. Public Library. Williams Academy. STONEHAM .....Public Library. Young Men's Christian Association. SUDBURY .... Wadsworth Academy. SUNDERLAND.....Farmers' Club. Young Men's Christian Association. SWANSEA.....Agricultural Library Association. SWAMPSCOTT _____Literary Association. TAUNTON .... Bristol Academy. Bristol County Agricultural Society. Fisher Library. Lunatic Hospital. Old Colony Historical Society. Old Ladies' Home. Public Library. Young Men's Christian Association. TEWKSBURY.....State Alms House. TISBURY ..... Martha's Vineyard Seminary. Topsfield Academy. Townsend_____Young Men's Christian Association. Truro Union Academy. TYNGSBORO .....Tyngsboro Library. Winslow Academy. VINEYARD HAVEN ... Sailors' Free Reading Room and Lib'ry, WAKEFIELD.....Young Men's Christian Association. WALTHAM....Farmers' Club. Farmers and Mechanics' Library. Public Library. Rumford Institute. WARREN .... Young Men's Christian Association. WATERTOWN ..... Public Library. WAYLAND ..... Public Library. WEBSTER.....Young Men's Christian Association. Wellesly ..... Young Men's Christian Association.

WEST AMESBURY .... Young Men's Christian Association.

WESTBORO .... Public Library. State Reform School. Young Men's Christian Association. WEST BROOKFIELD ... Young Men's Christian Association. WESTFIELD .... Atheneum. State Normal School, (for both sexes.) Westfield Academy. Young Men's Christian Association. WESTFORD _____Agricultural Library. Public Library. Westford Academy. WEST MEDFORD ..... Mystic Hall Seminary. WESTMINSTER ..... Westminster Academy. WEST NEWTON.....Athenæum. West Newton Eng. and Class. School. Young Men's Christian Association. WESTON .... Public Library. WEST ROXBURY ..... Public Library. WEST TISBURY ...... Duke's County Academy. Martha's Vineyard Agricultural Soc'ty. WEST TOWNSEND .... Family Boarding School. Townsend Female Seminary. WESTVILLE_____Young Men's Christian Association. WEYMOUTH_____Young Men's Christian Association. WHATELY.....Farmers' Club. WHITINSVILLE____Circulating Library. Young Men's Christian Association. WILBRAHAM ..... Wesleyan Academy. Athena. Pierian. Union Philosophical Society. Young Men's Debating Club and Lyceum. WILLIAMSTOWN ..... Williams College.

Alpha Delta Phi.

Chi Psi.

Delta Kappa Epsilon.

Delta Psi.

Kappa Alpha.

Mills Theological Society.

Observatory.

WILLIAMSTOWN ..... Williams College—continued.

Philologian Society.
Philotechnian Society.
Sigma Phi.

WINDHAM.....Young Men's Christian Association.
WINCHENDON......Public Library.

WINCHESTER____Public Library.

Young Men's Christian Association.

Young Men's Christian Association.
Woburn.....Natural History Society.

Public Library. Religious Charitable Library. Warren Academy.

Young Men's Christian Association.

Young Men's Library.

WORGESTER American Antiquarian Society.

Children's Friend Society. Choral Union. City Hospital.

College of the Holy Cross.

Societies.
Highland Military Academy.
Hospital of the Sisters of Mercy.

Howe's Business College.

Mechanics' Association.

Oread Collegiate Institute for Y. Ladies.

Oread High and Grammar School for

Oread High and Grammar School for Boys. People's Club.

St. Anne's Convent.

State Lunatic Asylum.

State Normal School.

Worcester Academy.

Worcester Agricultural Society.
Worcester Anthropological Society.

Worcester Association for Mutual Aid in Detecting Thieves. Worcester Auxiliary Bible Society.

Worcester County Free Institute of Industrial Science.

Worcester Co. Homeop. Med. Society.

### MASSACHUSETTS.

WORCESTER	Worcester Co. Horticultural Society.
	Worcester County Musical Association.
	Worcester District Medical Society.
	Worcester Free Public Library.
	Worcester Highland Military School.
	Worcester Lyceum and Natural History Association.
	Young Men's Christian Association.
WBENTHAM	Day's Academy.
YARMOUTH	Lyceum.
	Young Men's Christian Association.
YARMOUTHPORT	Young Men's Christian Association.

### MICHIGAN.

.Adrian College.

Lambda Phi Society.

Theological Department,

Graded and High School.

Horticultural Society.

Law Library...

Lenawee County Agricultural Society.

Lyceum.

Young Men's Christian Association.

Albion College.

Albion Commercial College.

Female College.

Atheniædes.

Clever Fellows.

Eclectics.

Young Ladies' Association. Graded and High School.

-Graded and High School.

Young Men's Christian Association.

Graded and High School.

Young Men's Society.

Graded and High School.

Young Men's Christian Association.

ANN ARBOR..... _Agricultural and Horticultural Society.

Graded and High School.

Misses Clark's School.

University of Michigan.

Alpha Nu Society.

Christian Library Association.

Literary Adelphi.

.Phi Alpha.

Law Department.

Medical Department.

Observatory.

School of Pharmacy.

Scientific Department.

Young Men's Christian Association.

	•
ARCADIA	Farmers' Club.
	Agricultural and Mechanics' Society.
	Graded and High School.
	Ladies' Hort. and Industrial Associa'n.
	Young Men's Christian Association.
BAY CITY	Graded and High School.
	Young Men's Christian Association.
Benzonia	Grand Traverse College.
BIG RAPIDS	Graded and High School.
	Graded and High School.
	Graded and High School.
CASSOPOLIS	Agricultural Society.
	Eaton County Agricultural Society.
	Graded and High School.
CLARKSTON	_Clarkston Academy.
	Graded and High School.
CLINTON	
	Graded and High School.
COLDWATER	Branch County Agricultural Society.
•	Graded and High School.
CONSTANTINE	Graded and High School.
	_Graded and High School.
	Young Men's Christian Association.
DECATUR	Graded and High School.
Detroit	Academy of Medicine.
	Academy of the Sacred Heart.
	Art Gallery.
	Audubon Club.
	Barstow School.
	Bishop School.
	Bryant and Stratton Bus. University.
	Bryant, Stratton & Goldsmith's Com- mercial College.
	Burns Club.
	Capital School.
	Cass School.
	Clinton Street School.
	Detroit High School.
	Detroit Medical College.
	Duffield School.
	Eighth Ward School.
	G

#### MICHIGAN.

Ionia	Graded and High School.
	Ionia County Agricultural Society.
	Young Men's Association.
	Young Men's Christian Association.
Ishpenning	Graded and High School.
	Gratiot County Agricultural Society.
	_Jackson County Agricultural Society.
	Graded and High School.
	State Prison.
	Young Men's Christian Association.
	Young Men's Library.
JONESVILLE	Farmers, Mechanics' Association.
	Graded and High School.
Kalamazoo	_Asylum for Insane.
	Graded and High School.
	Gregory's Commercial College.
	Kalamazoo College.
	Theological Department.
	Kalamazoo Literary Institute.
	Kalamazoo Medical Society.
•	Ladies' Library.
,	Young Men's Library.
	Young Men's Christian Association.
	_Van Buren County Medical Society.
	Ottawa County Agricultural Society.
Lansing	Bartlett's Commercial College.
	Central Union Agricultural Society.
	City School Library.
	German Agricult. and Horticult Soc'ty.
	Graded and High School.
	Ladies Library Association.
	Lansing Library.
	Odd Follows Institute of Michigan.
	State Agricultural College.
	State Library.
	State Reform School.
<b>T</b>	Young Men's Christian Association.
	Graded and High School.
	Graded and High School.
	Graded and High School.
LEONI	_Michigan Union College.

# MICHIGAN.

LEONI	Theological Institute.
	Graded and High School.
	Graded and High School.
	Graded and High School.
MUNACONTAL	Ursuline Academy.
	Young Men's Christian Association.
MARGHATI.	Calhoun County Agricultural Society.
MANGMAUU	Graded and High School.
	Ladies' Library Association.
	Union Farmers' Club.
	Union School.
	Young Ladies' Institute.
	Young Ladies' Seminary.
W	Young Men's Christian Association.
	Graded and High School.
MONROE	Catholic Academy.
	Graded and High School.
	Monroe County Agricultural Society.
	Public Library.
	Young Ladies' Collegiate Institute.
•• ~	Young Men's Christian Association.
	-Graded and High School.
MUSKEGON	Graded and High School.
••	Library Association.
	Graded and High School.
NEWAYGO	Graded and High School.
NILES	Berrien County Agricultural Society.
	Graded and High School.
_	Young Men's Christian Association.
OLIVET	
	Adelphic Society.
	Phi Alpha Pi Society.
	Soronian Society, (Ladies.)
	Young Men's Christian Association.
Ontonagon	Ontonagon Agricultural Society.
	Public Library.
OTSEGO	-Graded and High School.
	-Graded and High School.
	Graded and High School.
Paw Paw	_Van Buren County Agricultural Soc'ty.
_	-Farmers and Mechanics' Association.
7	41

PLYMOUTH	Farmers and Mechanics' Club.
	Graded and High School.
PONTIAC	Graded and High School.
	Oakland County Agricultural Society.
	Young Men's Christian Association.
PORT HURON	Graded and High School.
	Ladies' Library Association.
	Public Library of the City.
	Young Men's Christian Association.
PORTSMOUTH	Graded and High School.
Quincy	Graded and High School.
Romeo	Dickinson Institute.
	Graded and High School.
	Macomb County Agricultural Society.
SAGINAW CITY	Graded and High School.
	Graded and High School.
	Graded and High School.
SOUTH SAGINAW	Graded and High School.
SPRING ARBOR	Central Lodge Library.
Springdale	Lake Shore Horticultural Association.
St. CLAIR CITY	Graded and High School.
	Young Men's Christian Association.
St. John's	Clinton County Agricultural Society.
	Graded and High School.
STURGIS	Graded and High School.
TECUMSEH	Graded and High School.
THREE RIVERS	Graded and High School.
	St. Joseph Valley Medical Association.
TRENTON	Young Men's Christian Association.
Union City	Young Men's Christian Association.
UTICA	Graded and High School.
VOLIMA	Farmers' Club.
	Graded and High School.
WYANDOTTE	Graded and High School.
YPSILANTI	Graded and High School.
	State Normal School.

State Normal School.

Normal Lyceum.

Young Men's Christian Association.

### MINNESOTA.

A	St. Ousin Assistance
	St. Croix Academy.
ALBERT LEA	_Agricultural Society.
Ā	Select School.
ANOKA	Young Men's Christian Association.
	_Young Men's Christian Association.
	_Agricultural Association.
CAL DONIA	_Agricultural Society.
	Caledonia College Institute.
	High School.
CANNON FALLS	
	_Agricultural Society.
	_Moravian Seminary.
CHATFIELD	_Academy.
CLEVELAND	_Agricultural Society.
COURTLAND	
DULUTH	_Duluth Library.
	Young Men's Christian Association.
FARIBAULT	_Bethlehem Academy.
	Bishop Seabury Hall Divinity School.
	Faribault College.
	Fruit-growers' Club.
	Institution for Deaf, Dumb, and Blind.
	Rice County Agricultural Association.
	Shattuck Grammar School.
	St. Mary's Hall.
	Wells Agricultural and Hort. Club.
FORESTVILLE	_Farmers' Club.
GOODHUE	
	Young Men's Christian Association.
	_Agricultural Society.
	Catholic Academy.
	Board of Education.
	_Agricultural Society.
	Parish School, (Episcopalian.)
	_Agricultural Society.
	_Agricultural Society.
	Catholic School.
	4 444 vii

#### MINNESOTA.

11

Mankato.....Second State Normal School. Teachers' Library Association. Young Men's Christian Association. MERIDAN ....Lutheran School. MINNEAPOLIS _____Agricultural Society. Atheneum. Board of Education. High School. Young Men's Christian Association. MINNESOTA CITY____Farmers' Club. MINNESOTA LAKE .... Agricultural Society. NEW ULM____Farmers' Association. Turnverein Association. NORTHFIELD ...... Northfield College. RED WING.....Agricultural Society. Hamline University. Adelphian Society. Sigournean Society. Parish School, (Episcopalian.) Red Wing Collegiate Institute. Scandinavian Theological Seminary. Young Men's Christian Association. ROCHESTER _____Agricultural Society. Pike's Normal School. Young Men's Christian Association. ROCKFORD .....Agricultural Society. ROSEMOUNT ..... Union Club. St. Anthony....Library Association. St. Anthony College. University of Minnesota. St. CLOUD _____Third State Normal School. St. Joseph.....St. Benedict's Academy. St. Paul____Academy of Natural Science. Academy of St. Joseph, (Female.) Agricultural Society. Baldwin University. Board of Education. Cathedral Public School. German Literary Association. Mercantile Library Association. Minnesota Historical Society.

### MINNESOTA.

<b>A</b>	
ST. PAUL	Normal Female Seminary.
	St. Mary's Public School.
	State Agricultural College.
	State Library.
	State Reform School.
	Young Men's Christian Association.
St. Peter	Hospital for the Insane.
	Lake Prairie Agricultural Society.
	Lutheran School.
	St. Peter Library Association.
SHELL ROCK	_Select School.
SHIELDSVILLE	_Agricultural Club.
SIBLEY	_Agricultural Society.
Spring Valley	_Agricultural Society.
SMITHFIELD	_Agricultural Society.
STILLWATER	_Stillwater Library.
	Young Men's Christian Association.
STOCKTON	_Agricultural and Horticultural Society.
	Farmers' Club.
WACONIA	_Agricultural Club.
Warsaw	Farmers' Club.
Wasioga	-Groveland Seminary.
WINNEBAGO CITY	_Agricultural Society.
WINOMA	First State Normal School.
	Model School.
	Young Men's Christian Association.

#### MISSISSIPPI.

ABERDEEN____Female Institute. Library Association. BAY SAINT LOUIS .... Catholic Female Academy. CARROLLTON . ..... Masonic Male Academy. CHULAHOMA .....Cold Water Female Seminary. CLINTON.....Central Female Institute. Mississippi College. Hermenian Society. Philomathean Society. COLUMBUS.....Columbus Female Institute. Columbus Medical College. High School. EARLY GROVE......Wilson Hall School. Enon .....Female College. FAYETTE Central College. High School. GARLANDSVILLE ..... Union Seminary. GHOLSON ......Summerville Institute for Boys. GRENADA.....Bascom Female Seminary. Town Library. Yallobusha Baptist Female College. HERNANDO.....Mississippi Female College. HIGHLAND ..... Calmack's Academy. HOLLY SPRINGS..... Chalmers Institute. Franklin Female College. Shaw University. State Normal School. Literary Society. JACKSON ......Alcorn University. Blind Asylum. Fair Lawn Institute. Deaf and Dumb Institute. Jackson Female Institute. Lunatic Asylum. Mississippi College of Pharmacy. State Historical Society.

> State Library. State Prison.

Lexington	_Central Mississippi Female College.
	Male and Female Academy.
MACON	Macon Academy.
McLeod's	Salem High School.
	Meridian Female College.
	Natchez Institute.
	St. Joseph's Academy.
	Young Men's Christian Association.
Oxford	_Union Female College.
•	University of Mississippi.
	Hermean Society.
	Law School.
	Phi Sigma Society.
	Scientific Department.
Pass Christian	_Pass Christian College.
PONTOTOC	_Male and Female Academy.
•	Mary Washington Female College.
	Chickasaw Female College.
PORT GIBSON	
SARDIS	_Agricultural and Mechanical Society.
Sharon	_Madison College.
	Sharon Female College.
SUMMERVILLE	_Summerville Institute.
	_Independent Academy.
Tongaloo	_Tongaloo University.
UTICA	_Female Institute.
WASHINGTON	_Jefferson College.
	State Agricultural Society.

### MISSOURI.

ALBANYGentry County Agricultural Society	cie <b>ty.</b>
ArcadiaHigh School.	
AshleyPike County Agric. and Mech. S	
AshtonClark County Agricultural Society	ety.
Bolivar	
Booneville Central Mo. Agricultural Societ	у.
BrunswickHigh School.	
CALEDONIACollegiate Institute.	
CantonChristian University.	
CAPE GIRARDEAUAcademy of the Loretto.	
St. Vincent's College.	
Theological Seminary.	
CARONDELETTheological Seminary.	
CARBOLTONFemale Seminary.	
CassvilleCassville Institute.	
CHAPEL HILL	
CHILLICOTHE High School.	•
College MoundMcGee College.	
ColumbiaBoone Co. Agric. and Mech. As	socia'n.
University of Missouri.	
Agricultural Department.	
Athenian Society.	
Medical Department.	
Normal Department.	
Union Literary Society.	
CONCORD St. Paul's School.	
Danville Seminary.	
DE Soto Seminary.	
DoverHigh School.	
EDINBURG Grand River College.	
FARMINGTON	
FAYETTECentral College.	
Female College.	
Howard Co. Agric. and Mech. Ass	ocia'n.
Howard High School.	
Fox CreekGrape-grower's Association.	
FRUITLANDNormal School.	

1

FULTON	_Callaway County Agricultural Society.
	Deaf and Dumb Asylum.
	Female Seminary.
	State Lunatic Asylum.
	Wostminster College.
	Philalthian Society.
	Philologic Society.
	Scientific Department.
	Society of Inquiry.
	Theological Department.
GLASGOW	_Lewis College.
	_Glaze City Seminary.
	_Diamond Grove Farmers' Club.
	Schuyler Co. Agric. and Mech. Society.
Greenwood	_Lincoln College.
HANNIBAL	
	High School.
	Literary Institute.
•	N. E. Mo. Horticultural Society,
•	St. Joseph's Academy.
	Young Men's Christian Association.
	Cass Co. Agric. and Mech. Association.
	Mont. Co. Agric and Mech. Society.
	Jefferson Co. Horticultural Society.
	Young Men's Christian Association.
HUNTSVILLE	Huntsville College.
Independence	
	High School.
T	Woodland College.
	_Southeast Agricultural Society.
JEFFERSON CITY	Cole Co. Agric. and Mech. Association. Female Seminary.
	High School.
	Historical Society of Missouri.
	Institute of Holy Innocents.
	Jefferson City College.
	Jefferson City Library.
•	Lincoln Institute.
	Methodist University.
	Missouri Penitentiary.
	State Cabinet Natural History.
	women comments at the configuration of the configur

Sr. Louis_____Home of the Friendless.

Homeopathic Medical College.

Hospital for the Insane.

House of Refuge. Kemper College.

Law Library.

Lyceum.

Marion College

Mary Institute.

Mercantile Library Association.

Missouri Dental College.

Missouri Medical College.

Missouri Seminary. Normal School.

O'Fallon Polytechnic Institute.

Orphans' Home.

Public School Library.

Sacred Heart Convent.

St. Bridget's Inst. for Deaf and Dumb.

St. Joseph's Academy.

St. Louis Agric. and Mech. Association.

St. Louis Female Institute.

St. Louis Medical College.

St. Louis Medical Society.

St. Louis University.

Medical Department.

Orthological Society.

Philalethic Society.

Phileuphradigne Society.

Philharmonic Society.

Students' Library.

St. Louis Horticultural Society.

St. Louis Vocalist Association.

State Asylum for the Blind.

Union Literary Association.

Washington University.

suing ton University.

Law Department.

Scientific Department.

Young Men's Christian Association.

Young Men's Christian Assoc'n. (Ger.)

SPRINGFIELD____Southwestern State Agric. Society.

Springfield	_Springfield Library.
	Young Men's Christian Association.
STEWARTSVILLE	_Stewartsville Seminary.
TRENTON	High School.
VERSAILLES	High School.
WARRENSBURG	_State Normal School.
	Young Men's Christian Association.
WARRENTON	_Agricultural and Mechanical Society.
	Methodist College.
WAVERLY	_Shelby College.
Westport	High School.

# MONTANA.

#### NEBRASKA.

Arago.....Nemaha Agricultural Society.

BEATRICE.....Public School Library. Brewer's Ranch .... Merrick County Agricultural Society. Brownsville.....Nemaha County Agricultural Society. Public School Library. Young Men's Christian Association. DAKOTAH CITY......Dakotah City Library. FONTENELLE____Congregational College. Nebraska University. FREMONT ..... Public School Library. St. James Hall School. Young Men's Christian Association. Kansas City_____Young Men's Christian Association. Lincoln....State Library. University of Nebraska.

NEBRASKA CITY..... Camp Creek Farmers' Club.

Nebraska College and Divinity School Otoe County Farmers' Club. Public School Library. Young Men's Christian Association. NEMAHA CITY.....Public School Library.

OMAHA.....Brownell Hall for Young Ladies. Collegiate Institute.

Douglas County Agricultural Society.

High School. Institute for Deaf and Dumb. Mt. St. Mary's Academy.

Nebraska Historical Society.

Simpson University. Young Men's Christian Association.

PERU.___State Normal School.

PLATTSMOUTH..... Cass County Farmers' Club.

SALEM____Public School Library.

Richardson County Agricultural Soc'ty.

# NEVADA.

CARSON CITY	Orphans' Home.
	State Library.
	State Prison.
	Superintendent of Public Instruction.
Ніко	Farmers' Club.
Virginia	High School.

NEW HAMPSHIRE.	
AMHERST	Aurean Academy.
ATKINSON	Atkinson Academy.
Ватп	
	Canaan Union Academy.
•	Mascoma Agricultural Society.
	Young Men's Christian Association.
	Young Men's Christian Association.
	Chester Normal Institute.
CHESTERFIELD	_Academy.
CLAREMONT	Stevens High School.
	Young Men's Christian Association.
	Colebrook Academy.
•	Circulating Library.
	Concord Agricult. and Lib'ry Associa'n.
	High School.
	Merrimac County Agricultural Society.
	New Hampshire Asylum for Insane.
	New Hampshire Historical Society.
	Public Library.
	St. Paul's School.
	State Agricultural Society.
	State Library.
	State Prison.
	Young Men's Christian Association.
CONTOCCOOKVILLE	Contoocook Academy.
	Coos and Essex Agricultural Society.
Dover	

Dover Franklin Academy. High School. Strafford Agricultural Society. Deering Academy. DERRY.....Pinkerton Academy. DUBLIN-----High School. Juvenile and Social Library. Union Library. East Derry ____Adams Female Academy. EXETER.....Agricultural and Horticultural Society. High School. Phillips Exeter Academy. Golden Branch Society. Robinson Female Seminary. Rockingham Co. Agricultural Society. Town Library. Young Men's Christian Association. Young Men's Christian Association. FISHERVILLE ..... Penacook Academy. Francestown Academy. Young Men's Christian Association. FRANKLIN .....Franklin Academy. Young Men's Christian Association. GILMANTON .... Academy. Social Library. GOSHEN .....Young Men's Christian Association. Groton _____Public Library. GREAT FALLS......High School. Manufacturers' and Village Library. Young Men's Christian Association. HAMPTON......Hampton Academy. Hampton Falls..... Hampton Falls Farmers' Club. Rockingham Academy. Hancock Academy. Literary and Scientific Institute. HANOVER_____Dartmouth College. Chandler Scientific School. Dartmouth Home School. Dartmouth Scientific Association.

HANOVER .... Dartmouth College -continued. Medical College. Northern Academy of Arts and Sciences. Philotechnic Society. Social Friends' Library. Society of Inquiry. Thayer School of Civil Engineering. United Fraternity Library. Hubbard's Select School. New Hampshire College of Agriculture and Mechanic Arts. HAVERHILL .....Academy. HILLSBOROUGH _____Agricultural and Mechanical Society. JAFFREY ..... Conant Free School. Keene High School. KINGSTON PLAINS...Kingston High School. LACONIA.....Gilford Academy. Young Men's Christian Association. Lancaster____Farmers' Club. Lancaster Academy. Public Library. Reading Room Association. LEBANON -----High School. Liberal Institute. Town Library. LITTLETON .....Graded School. LOUDON CENTRE Loudon Centre Farmers' Club. MANCHESTER ____Art Association. City Library. High School. Liberal Christian Union. New Hampshire Business College. State Reform School. State Agricultural Society. Young Men's Christian Association. MARLOW......Marlow Academy. MERIDEN____Kimball Union Academy. Philadelphian Society. Young Men's Christian Association.

42

8

Hillsboro Co. Agric. and Mech. Asso.

MILFORD ......High School.

MILTON ......Milton Classical Institute. MOUNT VERNON ____ McCollum Institute. NASHUA .....High School. Nashua Literary Institute. Nashua City Library. Young Men's Christian Association. NEW HAMPTON....Literary and Biblical Institution. Literary Adelphi. Society of Theological Research. Social Fraternity. New Hampton Academy. New Ipswich ..... Appleton Academy. Young Men's Christian Association. New London .... Literary and Scientific Institute. New Market.....Young Men's Christian Association. NewPort _____Newport Academy. Northwood .....Northwood Academy. North Conway Academy. Northwood Seminary. ORFORD.....Orford Academy. PEMBROKE ..... Pembroke Academy. Peterborough ..... High School. Public Library. PITTSFIELD.....High School. Pittsfield Academy. Pittsfield Agricultural Society. Portsmouth ____Athenseum. High School. Lyceum. Mercantile Library Association. Piscataqua Agricultural Society. St. John's Church Library. South Parish Library. Unitarian Church Library. U. S. Navy Yard Library. Young Men's Christian Association. PLYMOUTH .....Grafton County Agricultural Society.

State Normal School.

RAYMOND ......High School.

REED'S FERRY	Granite State Military and College In-
	stitute.
Rollinsford	High School.
	Library Association.
	Young Men's Christian Association.
SANDWICH	Beede's Acad., Inst., and Normal School.
	Young Men's Christian Association.
Seabrook	Dearborn Academy.
	Barnard Academy.
	Austin Academy.
TILTON	New Hampshire Conference Seminary
	and Female College.
<b>,</b> .	Public Library.
Union	Union Village Library.
•	Upper Coos and Essex Agricultural So-
	ciety.
WAKEFIELD	Wakefield Academy.
	Wakefield and Brookfield Union Li-
	brary.
WALPOLE	High School.
WARNER	Simond's High School.
	Tubbs's Union Academy.
	Clinton Grove Seminary.
	Wentworth Academy.
	Tilden Ladies' Seminary.
Westmoreland	Westmoreland Valley Seminary.
	Nesmith Library.
	Young Men's Christian Association.
	Wolfeborough Christian Institute.
	,

# NEW JERSEY.

	•
ABSECOM	_Atlantic Literary Association.
Атсо	Atco Library Association.
	Social Agricultural Society.
ATLANTIC CITY	Young Mon's Christian Association.
Belvidere	Young Men's Christian Association.
	Young Men's Christian Association.
BEVERLY	Farnum Preparatory Normal School.
	Presbyterian Academy.
	Library Association.
Bordentown	
	Young Men's Christian Association.
BRICKSBURG	_Farmers' Club.
Bridgeton	Bridgeton Library.
	Female College.
	South Jersey Institute.
	West Jersey Academy.
	Young Men's Christian Association.
BURLINGTON	Burlington College.
•	Theological Department.
	Burlington Library.
	Farmers' Club.
	St. Mary's Hall, (school.)
CAMDEN	_Collegiate Institute.
	Franklin Library.
	Young Men's Christian Association.
Dover	Young Men's Christian Association.
	Agricultural and Pomological Society.
Egg Harbor City	Gloucester Farmers' Club.
	Agricultural Society.
ELIZABETH	9
	Farmers' Club.
	Mr. J. F. Pingry's Classical School.
	Miss Ranney's School.
	Miss Spalding's School.
	St. Mary's Institute.
	St. Patrick's Institute.
	St. Walberga's Academy.
	Young Men's Christian Association.

### NEW JERSEY.

	•
Forest GroveAgric	ultural and Horticultural Society.
Freehold Freeh	
Monn	nouth Co. Agricultural Society.
Youn	g Ladies' Seminary.
Youn	g Men's Christian Association.
	wich Agricultural Society.
	wich Library.
HACKENSACKLibra	ry Association.
	g Men's Christian Association.
HADDONFIELDHadd	
HACKETTSTOWN: Youn	g Men's Christian Association.
HAMILTON SQUARE Hami	Iton Library
HAMMONTON Pomo	
	g Men's Christian Association.
	Classical and Scientific Institute.
Hoboken St. M	
	ns High School.
	ns Institute of Technology
	g Men's Christian Association.
JAMESBURGFarm	
	Reform School.
JERSEY CITYChari	
	eal Society.
	al School.
	ological Society.
	oysius Academy.
	ancis Hospital.
	g Men's Christian Association.
LambertvilleYoun	g Men's Christian Association.
LAWRENCEVILLEClassi	cal and Commercial High School.
C	Calliopean Society.
I	Philomathean Society.
Young	g Men's Christian Association.
MadisonDrew	Theological Seminary.
St. El	izabeth's Academy.
St. Jo	seph's Boy's School.
MATAWANGlenv	rood Collegiate Institute.
	ultural and Horticultural Society.
MONT CLAIR. Fema	
	ry Association.
	g Men's Christian Association.
1041	D

MOUNT LAUREL ..... Progressive Farmers' Club. MORRISTOWN ..... Farmers and Mechanics' Club. Female Institute. G. L. Wright's Boy's School. Miss Envell's Young Ladies' School. Morris Institute and Apprentices' Lib. MOUNT HOLLY.....Burlington Co. Agricultural Society. Burlington County Lyceum. Greenwood Institute. MULLICA HILL..... Harmony Library. NEWARK ..... Female Seminary. High School. Medical Association. Newark Academy. Newark Library Association. Newark Business College. New Jersey Historical Society. Pharmaceutical Association. St. Benedict's Grammar School. St. Mary's Academy. St. Michael's Hospital. St. Scholastica's Academy. Van Arsdale's Observatory. Young Men's Christian Association. _Farmers' Club. NEW BRUNSWICK ... Medical Society of New Jersey. Rutger's College. Middlesex Historical Society. New Jersey Microscopical Society. Natural History Society. Peithosophian Society. Philoclean Society. Rutger's College Grammar School. Scientific School. State Agricultural College. Theological Seminary. Young Men's Christian Association. Young Men's Library Association. New Market.....Farmers and Mechanics' Club. NEWTON.....Collegiate Institute.

> Newton Lyceum. Public Library.

0	FA
URANGE	Lyceum and Library Association.
	Young Men's Christian Association.
	High School.
<b>T</b>	Female Seminary.
Paterson	Crook's Free Lib'ry and Reading Room.
	High School.
	Horticultural Association.
	Passaic Historical Society.
_	St. Agnes Academy.
	Seminary and Female Collegiate Inst.
PERTH AMBOY	Eagleswood Military Academy.
	Young Men's Christian Association.
PLAINFIELD	Young Men's Christian Association.
	High School.
Princeton	_College of New Jersey.
· ·	American Whig Society.
	Cliosophic Society
	Halsted Observatory.
	Law School.
	Theological Seminary
RAHWAY	_Female Institute.
	Rahway Library Association.
ROCKAWAY	Young Men's Christian Association.
SALEM	_Salem Academy.
	High School.
Somerville	Farmers' Club.
	Classical School.
	Public Library.
South Orange	_Seton Hall College
	Young Men's Christian Association.
South Vineland	_Fruit-growers' Club.
TRENTON	_Business College.
	State Library.
	State Lunatic Asylum.
	State Normal School.
	State Prison.
	Teachers' Library, (in office of State Su-
	perintendent.)
	Trenton Academy.
	Philomathean Society.
	Trenton Library Association.
	Young Men's Christian Association.

### NEW JERSEY.

Vineland	Agricultural and Horticultural Society
	Methodist Episcopal Seminary.
	Vineland Histor. and Antiquarian Soc
	Young Men's Christian Association.
Westfield	Young Men's Christian Association.
	Lyceum and Library Association.
	Young Men's Christian Association.
Winslow	Odd Fellow's Library.
	Young Men's Christian Association.
	Agricultural Society.
	Woodbury Library Company.
Woodstown	Pilesgrove Library Association.
	Webster Club Library.

# NEW MEXICO.

	•
ALBUQUERQUE	_Academy, (male.)
	Sisters of Loretta Institute, (female.)
COLFAX	Elizabeth Institute.
Dona Ana	Las Cruza's Lady's Institute, (female.)
	Mesilla Academy, (male.)
Las Vegas	Las Vegas Academy, (male.)
	Lyceum.
	St. Mary's College, (female.)
LINCOLN	
	Mora College, (male.)
	Mora Institute, (female.)
SANTA FE	Academy of the Lady of Light, (fem.)
	Historical Society of New Mexico.
	Lyceum.
	St. Thomas's Institute.
	San Miguel College.
	Santa Fé University.
	Territorial Library.
	Young Men's Christian Association.
Socorro	
TA08	
	Convent of Visitation, (female.)
	, (

#### NEW YORK.

ACRA .....Greene County Agricultural Society. ADAMS ......Hungerford Collegiate Institute. Addison Academy. AFTON.....Agricultural Society. ALBANY.....Academy of the Sacred Heart. Albany Academy. Albany Business College. Albany Charit. Eye and Ear Infirmary. Albany Co. Agric. and Indus. Society. Albany County Medical Society. Albany Female Academy. Albany Hospital. Albany Hospital Infirmary. Albany Institute. Albany Library. Albany Lyceum. Albany Medical College. Albany Orphan Asylum. Apprentices' Library. Assembly Library. Baptist Missionary Union. Board of Public Instruction. Board of Trade. Cathedral Female Charity School. Cathedral Male Charity School. Christian Brothers' Academy. City and Co. Agric. and Indus. Society. City Tract and Missionary Society. Classical Institute. Dental Society of State New York. Dudley Observatory. Episcopal Female College. Free Academy. Guardian Society and Home for the Friendless. Hebrew Benevolent Society. Holy Cross School.

Homeopathic Medical Society.

Albany	House of Shelter.
	Medical Society of State of New York
	Med. Soc. of State New York. (Homeop)
	National Institute.
•	New York State Agricultural Society.
	N. Y. State Museum of Nat. History.
	Penitentiary.
	Regents of the University of the State
	of New York.
	Senate Library.
	State Library of New York.
	State Normal School.
	St. John's Select School.
	St. Joseph's School.
	St. Mary's Library Association.
	St. Mary's Select School
	St. Patrick's School.
•	St. Peter's Dispensary.
	St. Peter's Hospital.
	St. Vincent's Orphan Asylum, (Male
•	and Female.)
	University of Albany.
	Law Department.
	Young Ladies' Institute.
	Young Men's Association,
	Young Men's Christian Association.
ALBION	Albion Academy.
	Orleans County Agricultural Society.
	Phipps Union Seminary.
	Sisters of Mercy Academy.
	Young Men's Christian Association.
ALEXANDER	Genesee and Wyoming Seminary.
Alfred	Alfred University.
	Alleghanian Society.
	Ladies' Literary.
	Orophilian.
	Phi Mu.
	Religious Union.
	Almond Academy
	Otisco Farmers' Club.
Amenia	Amenia Seminary.

# NEW YORK.

AMES	Ames Academy.
Amsterdam	Amsterdam Academy.
	Young Men's Christian Association.
Andes	Andes Collegiate Institute.
	Alleghany County Agricultural Society.
	Angelica Academy.
Annandale	School of the Holy Innocents.
	St. Stephen's College.
Antwerp	Black River Conference Seminary.
ABCADE	Arcade Academy.
Argyle	.Argyle Academy.
	Chester Female Institute.
	Tonawanda Valley Agric. Society.
	Union Free School.
AUBURN	Asylum for Insane Convicts.
	Auburn Academic High School.
	Auburn Theological Seminary.
	Cayuga Asylum for Destitute Children.
	Cayuga Co. Agric. and Hort. Society.
	Home for the Friendless.
	St. Catharine's School.
	St. Thomas Orphan Asylum.
	State Prison Library.
	Young Men's Christian Association.
AUGUSTA	Augusta Academy.
AURORA	.Cayuga Lake Academy.
	Lyceum.
	Wells College.
Bainbridge	Agricultural Society.
BALDWINSVILLE	Baldwinsville Academy.
	Farmers' Club.
BALSTON SPA	State and National Law School.
BATAVIA	Davenport Female Orphan Asylum.
	Genesee County Agricultural Society.
	New York State Instit'n for the Blind.
	St. Joseph's Academy.
	St. Thomas Orphan Asylum.
	Union School.
	Young Men's Christian Association.
Ватн	Haverling Union School.
	Steuben County Agricultural Society.

Ватн	_Young Men's Christian Association.
	_Agricultural Society.
BELFAST	Genesce Valley Seminary.
Belleville	Union Academy.
BINGHAMTON	_Binghamton Academy.
	Broome Co. Agricultural Society.
	Female Seminary.
	New York State Inebriate Asylum.
	State Institute for Blind.
•	Susquehanna Seminary.
	Susquehanna Valley Home and Indus-
	trial School for Indigent Childen.
	Young Men's Christian Association.
BLACK ROCK	Young Men's Christian Association.
BREWSTER'S STATION	Young Men's Christian Association.
BRIGHTON	_Clover Street Seminary.
BROCKPORT	State Normal School.
Brookfield	_Agricultural Society.
	Brookfield Academy.
Brooklyn	_Adelphi Academy.
	Association for Improving Condition of
	Poor, 199 Joralemon street.
	Assumption School.
	Board of Health.
	Brooklyn Athenæum and Read'g Room.
	Brooklyn Business College.
	Brooklyn City Hospital.
	Brooklyn Collegiate and Polytech. Inst.
	Brooklyn Dental Society.
	Brooklyn Dispensary and Eye and Ear
	Infirmary.
•	Brooklyn Heights Seminary.
	Brooklyn Institute.
	Brooklyn Library Association.
	Brooklyn Medical Journal Association.
•	Central Dispensary.
	Children's Aid Society.
	Children's Home, 139 Van Brunt street.
	Church Charity Foundation of Long
	Island, Herkimer st., cor. Albany av.
	City Library.

BROOKLYN ...... Convent of Mercy, (Charity School.)

Convent of the Sisters of Mercy.

Dental Infirmary.

Dispensary of the Church Charity Foun-

dation. Eye and Ear Hospital.

Female Academy.

Female Employment Society, 65 Court street.

street.

Home for Destitute Colored Children,
Dean street, near Troy avenue.

Home for Friendless Women and Children, 20 Concord street.

Home for the Aged Poor, Bushwick av-

enue, near De Kalb place. House of the Good Shepherd, 329 Henry

House of the Good Shepherd, 329 Henry street. Howard Colored Orphan Asylum, Pa-

cific street, near Ralph avenue.
Industrial School Association and Home

for Destitute Children, Butler street, near Flatbush avenue. Long Island College Hospital.

Long Island Coll. Hospital Dispensary.
Long Island College Hospital Journal
Association.

Association.
Long Island Historical Society.

Lyceum.

Medical Association of Eastern District.

Medical Society of County of Kings.

Mercantile Library Association.
Mt. Prospect Industrial School.

Mt. Prospect Industrial School.

Newsboys' Home, 61 Poplar street.

Orphan Asylum Society, Protestant,

Cumberland street, near Myrtle av.

Orphan Home Asylum of the Holy
Trinity Church, Graham avenue, near

Trinity Church, Graham avenue, near Johnson street. Orthopedic Infirmary.

Packer Collegiate Institute.

Roman Catholic Orphan Asylum, (female,) Congress and Clinton streets.

> Roman Catholic Orphan Asylum, (male,) St. Mark's place.

School of the Annunciation.

Society for Relief of Respectable Aged Indigent Females, 224 Wash. avenue.

St. Francis Academy.

St. John Baptist's College, (Rom. Cath.)

St. Joseph's Academy.

St. Mary's Academy.

St Mary's Hospital for Women.

St. Peter's Dispensary.

St. Peter's Hospital.

St. Philomena's Academy, 89 W. Warren street.

Strong Place Baptist Church Library. United States Naval Hospital, Flushing avenue.

United States Naval Lyceum.

Van Buren Street School.

Williamsburg Dispensary.

Youths' Free Library.

Young Men's Christian Association.

Asylum of Our Lady of Refuge.

Buffalo Business College.

Buffalo City Dispensary.

Buffalo General Hospital.

Buffalo Historical Society.

Buffalo Homeopathic Dispensary.

Buffalo Hospital of the Sisters of Charity.

Buffalo Orphan Asylum.

Buffalo Medical Association.

Canisius College.

Central School.

Charity Foundation of the Protestant Episcopal Church.

Erie County Medical Society.

Evangelical Lutheran St. John's Orphan Home.

Buffato..... Evangelical Lutheran Trinity School.
Female Academy.
German Young Men's Association.
Grosvenor Free Library.
Holy Angels School.
Home for the Friendless.
Ingleside Home.
Immaculate Conception School.

Le Conteulx St. Mary's Deaf and Dumb.

Asylum.

Law Library, (eighth district.)

Martin Luther College.

Theological Department.

Medical Dept. University of Buffalo.

Observatory.
Providence Lunatic Asylum.

Society of Natural History.

Society for the Protection of Destitute
Roman Catholic Children.

St. Bridget's School. St. Clair's Select School.

St. Francis Asylum.
St. Joseph's Academy.
St. Joseph's College.

State Normal School.

St. Joseph's Male Orphan Asylum.

St. Louis R. C. School. St. Mary's German Orphan Asylum.

St. Mary's Lying-in Hospital. St. Mary's School.

St. Patrick's School.

St. Vincent's Infant Orphan Asylum.

Young Men's Association.
Young Men's Christian Association.

Young Men's Christian Union.

BUTTERNUTS.....Gilbertsville Academy and Collegiate
Institute.

CAMBRIDGE ........ Washington Academy.

Hort., Pomo., and Floral Society.

Canajoharie Academy.

Asylum Deaf and Dumb.

CANANDAIGUABrigham Hall, (Lunatic Asylum.)
Canandaigua Academy.
Ontario County Orphan Asylum.
Ontario County Agricultural Society.
Ontario Female Seminary.
Society of Physicians.
St. Mary's Orphan Asylum and Acad.
. Young Men's Christian Association.
CANESTOTAYoung Men's Christian Association.
CANTONCanton Union School and Academy.
St. Lawrence County Agric. Society.
St. Lawrence University.
Law School.
Theological School.
CARMELRaymond Collegiate Institute.
CASTLE CREEKFarmers' Club.
CATHERINEFarmers' Club.
CATSKILLCatskill Library.
Free Academy.
Young Men's Christian Association.
CAZENOVIACentral New York Conference Semi-
nary.
Lyceum.
Philomathesian.
CHAMPLAINChamplain Academy.
CHARLOTTEVILLE New York Conference Seminary and
Collegiate Institute.
Athena.
Philomathean.
Theta Phi.
Wesleyan Literary Society.
CHATHAM F. CORNERS Columbia County Agricultural Society.
CHERRY VALLEY Cherry Valley Academy.
CHESTERChester Academy.
CHILIChili Seminary.
CHITTENANGOSullivan Farmers and Mechanics' Club.
Yates Polytechnic Institute.
CINCINNATUSCincinnatus Classical Union School.
CLARENCEClarence Academy.
CLAVERACK
Institute.
_ ·

~	
CLAVERACK	
CLIFTON	
	St. Mary's Orphan Asylum.
	St. Mary's Orphan School.
•	Clinton Grammar School.
	Clinton Liberal Institute.
	Hamilton College.
	Phoenix Society.
	Union Society.
	Law School.
	Observatory.
	Oneida County Agricultural Society.
	Rural High School.
•	Young Men's Christian Association.
Соновя	St. Bernard's School.
	St. Joseph's Select School.
•	Young Men's Christian Association.
	Poppenhausen Institute.
	Washington County Sheep-breeders and
	Wool-growers' Association.
CONSTANTIA	Agricultural Society.
Cooperstown	
	Thanksgiving Hospital.
	Orphan Home of the Holy Saviour.
CORNING	
	St. Joseph's Academy.
	State Normal School.
	Young Men's Christian Association.
	Agricultural Society.
	Academy.
	.Coxsackie Academy.
	Putnam County Agricultural Society.
CROWN POINT	Farmers and Mechanics' Association.
CRUM CREEK	
	State Prison, (Clinton.)
DANSVILLE	
DAVENPORT	
DELHI	
1/ HHA1	Delaware County Agricultural Society.
	Young Men's Christian Association.
	Clayton German Agricultural Club.
TRLUATION	Coay ou German Agricultural Club.

	Deposit Academy.
DE RUYTER	_De Ruyter Institute.
Dobb's Ferry	Young Men's Christian Association.
	Dundee Academy.
DUNKIRK	_Library.
	St. Mary's Orphan Asylum.
	St. Mary's Orphan School.
	Young Men's Christian Association.
EAST AUBORA	Aurora Academy.
	East Bloomfield Academy.
	_Young Men's Christian Association.
	_Clinton Academy.
EAST MAINE	Library Company. Farmers' Club.
EAST MORRISANIA	Ursuline Convent Academy.
	-Young Men's Christian Association.
East Pembroke	
	Conewango Valley Union Agric. Soc'ty
EASTON	Marshall Seminary.
	_Starkey Seminary.
	_S. R. Smith Infirmary.
	Munro Collegiate Institute.
ELIZABETHTOWN	
	Ulster County Female Seminary.
ELLINGTON	_Ellington Academy.
	Catholic Academy.
	Chemung County Medical Society.
	Elmira Academy of Medicine.
	Elmira Free Academy.
	Female College.
	St. Peters and St. Paul's School.
	Sisters of St. Mary Select School.
	Southern Tier Orphan Home.
	Young Men's Christian Association.
•	Young Men's Seminary.
Essex	_Agricultural Society.
	_Fairfield Academy.
FARMINGDALE	
	_Erasmus Hall Academy.
	King's County Hospital.
	King's County Lunatic Asylum.

FLORIDAGerrard Institute.	
S. S. Seward Institute.	
Flushing Library Association.	
Patriots' Orphan Home.	
Sanford Hall, (Lunatic Asylum.)	
St. Joseph's Academy, (for boys.)	
St. Paul's College.	
Young Men's Christian Association	_
FORDHAMFree Library.	u.
St. John's College.	
St. Joseph's Academy.	
	_
St. Joseph's Theological Seminary	<b>.</b>
Forestville Free Academy.	
FORT COVINGTON Fort Covington Academy.	
FORT EDWARDCollegiate Institute.	
FORT HAMILTON Inebriate's Home for King's Coun	
FORT PLAINFort Plain Seminary and Female	Solle-
giate Institute.	
FranklinDelaware Literary Institute.	
Franklinville Ton Brock Free Academy.	
FREDONIAChautauqua Farmers and Mecha Club.	mics'
79 10 1 101 1 079	
Farmers and Gardeners' Club of Pon	afret.
State Normal School.	
State Normal School.	
State Normal School. Young Men's Christian Association	
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy.	n.
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FULTONFalley Seminary, Oswego Falls Agricultural Society	n <b>.</b>
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FultonFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association	n <b>.</b>
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FultonFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association FultonvilleYoung Men's Association.	n <b>.</b>
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FultonFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association	n <b>.</b>
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FULTONFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association FULTONVILLEYoung Men's Association. GENESEEAthenæum Library. GENESEOAthenæum.	n <b>.</b>
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FULTONFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association FULTONVILLEYoung Men's Association. GENESEEAthenæum Library. GENESEOAthenæum. Geneseo Academy.	n. n.
State Normal School. Young Men's Christian Association Friendship Academy. Fulton	n. n.
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FultonFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association. FultonvilleYoung Men's Association. GeneseeAthenæum Library. Geneseo Academy. Livingston County Agricultural Society State Normal School.	n. n.
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FultonFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association. FultonvilleYoung Men's Association. GeneseeAthenæum Library. Geneseo Academy. Livingston County Agricultural Society State Normal School. GenevaDelancey Divinity School.	n. n.
State Normal School. Young Men's Christian Association FRIENDSHIPFriendship Academy. FultonFalley Seminary, Oswego Falls Agricultural Society Young Men's Christian Association. FultonvilleYoung Men's Association. GeneseeAthenæum Library. Geneseo Academy. Livingston County Agricultural Society State Normal School.	n. n.
State Normal School. Young Men's Christian Association FRIENDSHIP Friendship Academy. Fulton Sawego Falls Agricultural Society Young Men's Christian Association Fultonville Young Men's Association. Genesee Athenseum Library. Geneseo Academy. Livingston County Agricultural Society State Normal School. Geneva Delancey Divinity School. Female Seminary. Geneva Classical Union School.	n. n.
State Normal School. Young Men's Christian Association FRIENDSHIP Friendship Academy. Fulton Sawego Falls Agricultural Society Young Men's Christian Association Fultonville Young Men's Association. Genesee Athenseum Library. Geneseo Academy. Livingston County Agricultural Society State Normal School. Geneva Delancey Divinity School. Female Seminary. Geneva Classical Union School. Geneva Medical College.	n. n.
State Normal School. Young Men's Christian Association FRIENDSHIP Friendship Academy. Fulton Sawego Falls Agricultural Society Young Men's Christian Association Fultonville Young Men's Association. Genesee Athenseum Library. Geneseo Academy. Livingston County Agricultural Society State Normal School. Geneva Delancey Divinity School. Female Seminary. Geneva Classical Union School.	n. n.

Geneva	Hobart College—continued.
	Medical Department.
	Philopeuthian Society.
	Walnut Hill School.
	Young Men's Christian Association.
GILBERTSVILLE	•
	_Ulster County Agricultural Society.
	Glen's Falls Academy.
GLOVERSVILLE	
	Farmers' Hall Academy.
	Goshen Library Association.
	St. John's School.
	Young Men's Christian Association.
GOUVERNEUR	Agricultural and Mechanical Society.
	Wesleyan Seminary.
GREECE	
	Academy of Sisters of Mercy.
	St. John's School.
GREENVILLE	_Greenville Academy.
GREENPOINT	Young Men's Christian Association.
GREENWICH	Union School.
	Young Men's Christian Association.
Groton	Groton Academy.
HALF MOON	Half Moon Academy.
HAMBURG	Hamburg Union School.
HAMILTON	-Hamilton Female Seminary.
	Home School.
•	Madison University.
	Adelphian Society.
	Æonian Society.
	Athenæum Society.
	Grammar School.
	Missionary Society.
•	Theological Department.
	_Fruit Growers' Association.
	Harlem Library Association.
	Union Agricultural Society.
HARTWICK	Hartwick Theolo. and Classic. Seminary.
	Philophronean Society.
_	Theological Society.
HAVERSTRAW	_Orphan Asylum.

HEMPSTEAD......Queens County Agricultural Society.
HESS ROAD......Farmers' Club.
HENRIETTA......Monroe Academy.
HICKSVILLE.....Farmers and Mechanics' Club.
HOLLEY......Holley Union School and Academy.
HOMER.......Cortland Academy.
HOOSICK FALLS.....Union School.

Young Men's Christian Association.
HORNELLSVILLE _____Young Men's Christian Association.

Hudson ———Franklin Library Association.
Hudson Academy.
Hudson Female Academy.

Hudson Orphan and Relief Association.
HUNTINGTON .......Huntington Union School.

Young Men's Christian Association.

Hume_____Union Agricultural Society.

ITHACA______Farmers' Club.

Cornell University.

Natural History Society.

Ithaca Academy.
Young Men's Christian Association.

JACKSON _____St. Joseph's Literary Institute.

JAMAICA _____Union Hall Academy.

Young Men's Christian Association.

Young Men's Christian Association. Young Men's Literary Union.

JAMESTOWN _____Jamestown Union Schl. and Coll. Inst.
Young Men's Christian Association.

Johnstown Academy

Johnstown Academy

Johnstown Academy.
Jordan Academy.

KEESEVILLE......Keeseville Academy.
KINDERHOOK......Kinderhook Academy.
KINGSTON.......Kingston Academy.

Knoxville .......Knoxville Academy. · Lansingburg .......Academy.

LAWRENCEVILLE....Lawrenceville Academy.

Ingham University.

Normal Department. Leroy Academic Institute.

Altonian Literary Society.

7 7	TT 15 1 61 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Young Men's Christian Association.
	Liberty Normal Institute.
Lima	<u> </u>
	Amphictyon.
	Genesee Lyceum.
	Ladies' Literary Society.
	Genesee Wesleyan Seminary.
	Young Men's Christian Association.
LITTLE FALLS	
	Little Falls Academy.
LITTLE VALLEY	_Cattaraugus County Agricultral So-
	ciety.
LOCKPORT	Lockport Union School.
	Niagara County Agricultural Society.
	St. Joseph's Academy.
	Young Men's Association.
	Young Men's Christian Association.
Lopi	_Agricultural Society.
Lowville	Lewis County Agricultural Society.
	Lowrillo Academy
Lyons	-Union School.
	Wayne County Agricultural Society.
MACEDON CENTRE	Macedon Academy.
MAINE	
	Franklin Academy.
	Franklin County Agricultural Society.
	Young Men's Christian Association.
MANHATTANVILLE	Bloomingdale Asylum for Insane.
	Convent of Sacred Heart
MANLITIS	Agric. and Mech. Association.
	Manlius Academy.
	_Marathon Academy.
	Marion Collegiate Institute.
MARTINSBURG	Martin Institute.
	Mattawan Association.
	_Mayville Union School.
McGpAWVIII	McGrawville Union School.
	Mechanicville Academy.
MEDINA	
Mexico	Mariaa Academy
	Middleburg Academy.
PITIDDFERORG	middleburg Academy.

MIDDLETOWN	-Walkill Academy.
	State Homeopathic Asylum for the In-
	sane.
	Young Men's Christian Association.
MILLVILLE	
	_Herkimer County Agricultural Society.
	Montgomery Academy.
	_Monticello Academy.
	Moravia Union School and Academy.
MOUNT KISCO	_Bedford Farmers' Club.
	Young Men's Christian Association.
MOUNT MORRIS	Jane Grey School for Young Ladies.
	Union School and Academy.
MOUNT VERNON	_West Chester Farm School.
Naples	_Naples Academy.
	Horticultural Society.
NASSAU	_Nassau Academy.
Newark	Classical Union School.
NEW BERLIN	New Berlin Academy.
	_St. Peter's Academy.
•	Sailors' Snug Harbor. Board of Education.
Newburgh	Board of Education.
	Home for the Friendless.
	Horticultural Society.
	St. Patrick's School.
	Theolog. Sem. Associate Ref. Church.
	Young Men's Christian Association.
NEW PALTZ	Agricultural Society:
	New Paltz Academy.
	_St. Mathew's School.
	Young Men's Christian Association.
NEW YORK CITY	Academy of the Holy Cross, (343 W. 42.)
	Academy of the Sacred Heart, (24 W.17.)
	Alumni Association of Bellevue Hos-
	pital Medical College.
	Alumni Association of College of Phy-
	sicians and Surgeons.
	Alumni Association of Medical Depart-
	ment University of City of N. York.
	American and Foreign Bible Society,
	(76 E. 9th.)

NEW YORK CITY....American and Foreign Christian Union, (47 Bible House.)

American Baptist Free Mission Soc'ty, (37 Park Row.)

American Baptist Home Mission Soc'ty, (239 Broadway.)

American Baptist Missionary Union, (76 E. 9th.)

American Bible Soc'ty, (4 Bible House.)

American Bible Union, (32 Great Jones.)

American Board Commissioners for Foreign Missions, (31 Bible House.)

American Church Missionary Society, (3 Bible House.)

American Congregational Union, (69 Bible House.)

American Dramatic Fund Association, (842 Broadway.)

American Female Guardian Society, (32 E. 30th,) (schools.)

American Geographical and Statistical Society, (Cooper Union.)

American Home Missionary Society, (34 Bible House.)

American Institute, (Cooper Union.)

American Institute of Architects, (31 Pine.)

American Literary Association.

American Lyceum.

American Microscopical Society, (64 Madison avenue.)

American Missionary Association, (59 Reade.)

American Musical Fund Society, (33 Delancey.)

American Ophthalmological Society.

American Philological Society.

American Seamen's Friend Society, (80 Wall.)

American Society Civil Engineers and Architects, (63 William.) New York CITY....American Society for Diffusion of Useful Knowledge.

American Society for Prevention of Cruelty to Animals, (Broadway and E. 4th.)

American Sunday School Union, (8 Bible House.)

American Swedenborg Printing and Publishing Soc'ty, (20 Cooper Union.)

American Tract Society, (50 Nassau.) American Woman's Association.

Anthropological Institute of New York,

(cor. 2d avenue and E. 11th.)

Apprentices and Demilt Library, (472

Broadway.)

Artists' Fund Society, (E. 23d, cor. 4th avenue.)

Association for Advance. of Education.

Association for Befriending Children.

Association for the Benefit of Colored Orphans.

Association for Collegiate and Theological Education in the West.

Association for Deaf Mutes, (642 7 ave.)
Association for Improved Instruction of

Deaf Mutes, (642 7th avenue.)

Association for Improving the Condition of the Poor, (59 Bible House.)

Association for Relief of Juvenile Delinquents.

Association for the Relief of Respectable Aged Indigent Females, (226 E. 20th.)

Association of Mechanics and Tradesmen.

Astor Library, (Lafayette place.)

Asylum for Destitute Girls, (2d near 1st avenue.)

Asylum for Indigent Blind, (Blackwell's Island.)

Asylum for Inebriates, (Ward's Island.)

NEW YORK CITY....Asylum for Lying-in Women, (85 Madison street.)

Asylum for Respectable Aged Indigent Females, (226 E. 20th.)

Asylum for Soldiers, (Ward's Islaud.). Athenæum.

Bacon Literary Association.

Bancroft Institute.

Baptist Home for Aged and Infirm Persons, (41 Grove street.)

Bellevue Hospital, (foot 26th street.)

Bellevue Hospital Medical College, (26th and 1st avenue.)

Blind Mechanics' Association, (432 W. 36th.)

Bloomingdale Asylum for the Insano, (117th street.)

Blooming Grove Park Association, (103 Fulton street.)

Bureau of Medical and Sugical Relief for Out-door Poor, (Bellevue Hosp.)

Bureau of Records of Vital Statistics.

Board of Domestic Missions of the Reformed Church, 34 Vesey.)

Board of Education Reformed Church, (34 Vesey.)

Board of Education Presby. Church, (30 Vesey.)

Board of Education Protestant Episcopal Church, (5 Cooper Union.)

Board of Foreign Missions Reformed Church, (34 Vesey.)

Board of Foreign Missions Presbyterian Church, (23 Centre.)

Board of Missions Protestant Episcopal Church, (22 Bible House.)

Board of Pub. of Gen. Con. of New Jerus. Church, (20 Cooper Union.)

Board of Pub. of the Reformed Church, (34 Vesey.)

NEW YORK CITY....Catholic Orphan Asylum of St. Vincent de Paul, (39th, W. of 7th avenue.) Central Dispensary, (934 8th avenue.) Chamber of Commerce, (63 William.) Chapin Home for the Aged and Infirm, (66th street and 3d avenue.) Charity Hospital, (Blackwell's Island.) Children's Aid Society, (19 E. 4th st.) Children's Fold, (1119 2d avenue.) Churchmen's Reading-rooms, (1255)Broadway.) City Library, (12 City Hall.) City Missionary Society of the Reformed Church, (34 Vesey.) City Mission and Tract Society, (50 Bible House.) City Orphan Home, (101 St. Mark's place.) City Teachers' Association. Classical and Belles Lettres Academy. Clinton Place Female Seminary. College of City of New York, (cor. 23d and Lexington avenue.) Clionian Society. Phrenakosmian Society. College of Dentistry, (corner 21st and Broadway.) College of Pharmacy of the City of New York, (University of New York.) College of Physicians and Surgeons, (Medical Department of Columbia College, 4th avenue and 23d.) College of St. Francis Xavier, (49 W. 15th.) College of Veterinary Surgeons, (205

Lexington avenue.) Colored Home for the Aged and Indigent, (65th street, east of 1st avenue.) Colored Orphan Asylum, (143d and 10 avenue.)

NEW YORK CITY....Columbia College, (E. 49th, near 4th av.)

Law Department.

School of Mines.

Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Missions to Commission of Home Mission 
Commission of Home Missions to Colored People, (57 Bible House.)

Commissioners of Emigration.

Commissioners of Public Charities.

Cooper Union for the Advancement of Science and Art, (cor. 7th and 4th av.)

Country Nursery, (Staten Island.)

De la Sale Institute, (48 2d street.)
Demilt Dispensary, (cor. 2d avenue and

E. 23d.)
Dental Infirmary, (cor. Broadway and

Department of Public Charities and Correction, (cor. 11th and 3d ave.)

Department of Public Instruction, (cor. Grand and Elm.)

Department of Public Parks, (265 Broadway.)

Department of Public Works, (237 Broadway.)

Dermatological Society.

Dispensary and Hospital Society of the Women's Institute, (39 W. 16th.)

Dispensary of Church of Holy Trinity, (Madison avenue and 42d st.)

Ear Dispensary, (69 W. 35th.)

Eastern Dispensary, (57 Esseu street.)

East River Medical Association.

Eclectic Medical College, 223 E. 26th.) Emigrant's Refuge and Hospital (Ward's

Island.)

Epileptic and Paraly. Hospitals, (Black-well's Island.)

Eye and Ear Infirmary, (2d avenue, cor.

Female Assistance Society, (45 E. 23d street.)

NEW YORK CITY..... Homeopathic Medical Society of the Co. of New York, (107 4th avenue) Hospital for Incurables, (Blackwell's Island.) Hospital for Ruptured and Crippled. House and School of Industry, (120 W. 16th street.) House and School of Industry, (155 Worth street.) House of Mercy, (Prot. Epis., foot of W. 86th street.) House of Mercy, (Roman Catholic, 81st and 4th avenue.) House of Mercy, (33 E. Houston st.) House of Protection, (32 E. Houston st.) House of Refuge, (Randall's Island.) House of the Evangelists, (622 7th ave.) House of Rest for Consumptives, (8 Wall.) House of the Good Shepherd, (East River and 89th street.) Howard Mission and Home for Little Wanderers, (40 near Bowery.) Hygieo-Therapeutic College. Idiot and Epileptic Asylum, (Randall's Immaculate Conception School. Industrial Home for Jewesses, (145 W. Inebriate Asylum, (Ward's Island.) Infants' Hospital, (Randall's Island.) Infants' Home, (Lex. av., cor. E. 51st.) Infirmary for Women and Children, (128 2d avenue.) Institute of Reward for Orphans and Patriots, (148 E. 78th.) Institution for Deaf and Dumb, (Fanwood, Bloomingdale road and 162d st.)

Institute for the Blind, (9th avenue and

34th street.)

New York City___Institute for the Improved Instruction of Deaf Mutes, (Broadway and 44th.) Irving Literary Union. Isaac T. Hopper Home, (213 10th av.) Juvenile Asylum, (176 st. and 10th av.) Ladies' Aid Society of Hahnemann Hospital, (307 E. 55th.) Ladies' Art Association, (20 Clinton Hall.) Ladies' Benevolent Society, (B'nai Jeshurun,) (34th st. and 7th avenue.) Ladies' Board of Missions, (20 Wash. square.) Ladies' Christian Union, (28 Wash. sq.) Ladies' Union Aid Society of the M. E. Church, (255 W. 42d.) Ladies' Union Relief Association, (cor. 4th avenue and 23d street.) Law Institute Library. Leake and Watts Orphan House, (10th avenue and 112th street.) Life-Saving Benevolent Association, (51 Wall.) Lunatic Asylum, (117th and 10th av.) Lunatic Asylum, (Blackwell's Island.) Lyceum of Natural History, (64 Madison avenue.) Lying-in Asylum, (85 Marion.) Magdalen Asylum, (88th street, between 4th and 5th avenue.) Manhattan Academy, (213 W. 32d.) Manhattan College. Manhattan Dispensary, (246 E. 13th.) Manhattan Eye and Ear Hospital, (233 E. 34th street.) Manhattanville Dispensary, (Broadway

and 129th street.)
Marine Society, (12 Old slip.)

Marine Temperance Society, (72 Mad.) Mariners' Family Industrial Society. New York City....Masonic Board of Relief, (corner Grand and Centre streets.)

Mechanics' Institute.

Medical Library and Journal Association, (64 Madison avenue.)

Medical Society of the County of New York.

Medico-Chirurgical Society of German Physicians, (3 Essex street.)

Medico-Legal Society.

Mercantile Library Association, (Astor place.)

Merchants and Clerks' Library Associ-

ation.

Methodist Book Concern, (805 Broad-

way.)
Metropolitan Medical College.

Midnight Mission, (260 Greene street.)

Missionary Society of Methodist Episcopal Church, (805 Broadway.)

Montefiore Widow and Orphan and Benevolent Society.

Most Holy Redeemer School.

Mott Memorial Free Medical Library, (64 Madison avenue.)

Mount Sinai Hospital, (232 W. 28th st.) Musical Mutual Protective Union, (33

Delancey.)
National Academy of Design, (E. 23d,

cor. 4th avenue.)
Nat. Temp. Society and Pub. House, (58

Reade street.)
Nautical School, (92 Madison street.)

New England Society, (80 Wall street.)

New York Academy of Medicine, (E.

23d, cor. 4th avenue.)
New York African Society for Mutual
Relief, (185 Bleecker street.)

New York Association for the Advancement of Science and Art. NEW YORK CITY....New York Bible and Common Prayer-Book Society, (6 Cooper Union.)

> New York Bible Society, (7 Beckman) New York Caledonian Club, (118 Sullivan street.)

> New York City Lunatic Asylum (Blackwell's Island.)

> New York City Mission, (50 Bible H.) New York City Missionary Society and Church Extension Society of M. E. Church, (805 Broadway.)

New York County Medical Society.

New York Dispensary, (cor. White and Centre.)

New York Dispensary for Diseases of the Skin, (101 E. 30th street.)

New York Dispensary for Diseases of Throat and Chest, (234 5th street.)

New York Dorcas Society.

New York Episcopal Public School Society.

New York Female Assistance Society. New York Foundling Hospital.

New York Genealogical and Biographical Society, (64 Madison avenue.)

New York Historical Society, (2d ave., cor. E. 11th.)

New York Hospital, (13 W. 11th st.)

New York Hospital for Diseases of the Nervous System.

New York Hospital for Treatment of Cancer.

New York Hospital Library and Museum, (13 W. 11th street.)

New York Infirmary.

New York Juvenile Guardian Society, (207 Broadway.)

New York Law Institute, (41 Chambers street.)

New York Ladies' Home Missionary Society, (61 Park street.) NEW YORK CITY.... New York Medical and Surgical Soc'ty.

New York Medical Association.

New York Medical College, (187 2d avenue.)

New York Medical Union.

New York Medico-Historical Society. New York Museum Association, (599 Broadway.)

New York Orphan Asylum, (Boulevard and 74th street.)

New York Pathological Society, (E. 23d, cor. 4th avenue.)

New York Port Society, (72 Madison.) New York Prot. Epis. City Miss. Soc.

New York Provident Society, (349 Canal.)

New York Society Library, (67 University place.)

New York Seamen's Association, (Water and Cherry.)
New York Society for Relief of the

Ruptured and Crippled, (42d and Lexington avenue.)

New York Society for the Relief of Widows and Orphans of Medical Men.

New York Society of Practical Engineering, (24 Cooper Union.)

ng, (24 Cooper Union.)
New York State Colonization Society,
(42 Bible House.)

New York State Emigrant Hospital, (Ward's Island.)

New York State Poultry Society, (27 Chatham.)

New York State Society of the Cincinnati.

New York State Woman's Hospital, (49th and 4th avenues.)

New York Sunday School Union, (15 Bible House.) NEW YORK CITY....New York Typographical Society, (3 Chambers.)

New York Yacht Club.

Normal and High School, (corner 4th and Broadway.)

Normal College of City of New York.

Northeastern Dispensary, (222 E. 59th.) Northern Dispensary, (Christopher st.

and Waverley Place.)

Northwestern Dispensary, (36th street and 9th avenue.)

Northwestern Medical and Surgical Society of New York.

Notre Dame Academy, (165 3d street.) Nursery and Child's Hospital, (Lexing-

ton avenue, corner 51st street.)

Nursery Hospital, (Randall's Island.)

O Æ Society, (Medical.)
Obstetrical Society.

Odd Fellows' Asylum of the State of

New York, (Centre and Grand.)
Odontological Society.

Omacatl Society.

Opthalmic and Aural Institute, (46 E.

12th street.)

Opthalmic Hospital.

Opthalmological Society.

Orphan Asylum, (Bloomingdale road and 73d.)

Orphan Asylum, (Boulevard, near W. 143d.)

Orphan Asylum of St. Vincent de Paul, (211 W. 39th.)

Orphans' Home and Asylum of the Prot. Epis. Church, (49th st. and 4th av.)

Orthopædic Dispensary, (1299 B'dway.)

Our Lady of Sorrow School.

Philharmonic Society, (33 Delancey.)

Physicians' Mutual Aid Association.

Photographical Society.

Pitt Street Industrial School.

New York City....Presbyterian Board of Education, (23 Centre.)

Presbyterian Board of Foreign Missions, (23 Center street.)

Presbyterian Board of Home Missions, (30 Vesey street.)

Presbyterian Board of Publication, (23. Centre)

Presbyterian Home for Aged Women, (73d street and Madison avenue.)

Presbyter'n Hospital, (Madison avenue, between 70th and 71st streets.) Prisons-

The Tombs, or 1st District Prison, (cor. Centre and Franklin sts.) 2d District Prison, (Jefferson Market.)

3d District Prison, (Essex Market.) 4th District Prison, (57th street and

3d avenue.) Prison Association of New York, (58

Bible House.) Printers' Free Library, (3 Chambers street.)

Prot. Epis. Church Miss. Soc. for Sea-Prot. Epis. Gen. Miss. Dom. Com., (22

Bible House.) Prot. Epis. Gen. Miss. For. Com., (23

Bible House.)

Protestant Episcopal Historical Soc'ty. Prot. Epis. Soc. for Prom. of Relig. and

Learn. in State of New York. Prot. Epis. Soc. for Prom. of Evangel.

Knowledge, (3 Bible House.) Prot. Epis. Sunday School Union and Ch. Bk. Soc., (713 Broadway.)

Prot. Epis. Tract Society, (6 Cooper Union.)

Protestant Half-orphan Asylum, (65 W. 10th.)

NEW YORK CITY .... Quarantine Hospital.

Reading Rooms for Seamen-

72 Madison street.

Corner Oliver and Henry streets.

27 Greenwich street.

Corner Dover and Water streets.

Corner Market and Water streets.

34 Pike street.

275 West street.

Reading Rooms for Workingmen-

27 Greenwich street.

207 Greenwich street.

153 Worth street.

61 Park street.

342 E. 22d street.

545 E. 11th street.

211 W. 18th street. 204 Bleecker street.

335 E. 35th street.

327 Rivington street.

593 Hudson street.

228 W. 35th street.

510 Pearl street.

316 Water street.

Greenwich, corner Jane street.

308 Mulberry street.

Reception Hospital, (Centre street.)

Roman Catholic Orphan Asylum.

Boys, (5th avenue and 51st street.)

Girls, (corner Prince and Mott sts.)

Roosevelt Hospital, (59th, between 9th and 10th avenues.)

Rutger's Female College, (489 5th ave.)

St. Angela's Academy, (350 W. 22d st.)

St. Ann's School.

St. Barnabas Mission House, (304 Mulberry street.)

St. Bridget's Academy, (315 E. 10th st.)

St. Catherine's Academy, (35 E. Houston street.)

St. Columbus School.

NEW YORK CITY....St. David's Benevolent Society, (12 Bleecker street.)

St. Francis Xavier School.

St. Francis's Hospital, (407 5th st.)

St. Gabriel's Academy, (229 E. 36th st.) St. Gabriel School.

St. George's Society of New York, (432 Broome street.)

St. James's School.

St. John's Academy, (Madison avenue and 81st street.)

St. John's Evang. Select Fem. School, (Madison avenue and 50th street.)

St. Joseph's Academy, (194 W. 4th st.) St. Joseph's Home for the Aged, (315

W. 14th street.) St. Joseph's Industrial School, (Madison avenue and 81st street.)

St. Joseph's Orphan Asylum, (90th st. corner avenue A)

St. Lawrence's Academy, (84th, between 4th and 5th avenues.)

St. Louis Institute, (48 W. 24th street.)

St Luke's Ass'n. of St. Mark's Church. St. Luke's Home for Indigent Christian

Females, (487 Hudson street.) St. Luke's Hospital, (54th st., between

5th and 6th avenues.) St. Mary's Female Institute.

St. Mary's Hospital for Children, (206 W. 40th street.)

St. Mary's Male School.

St. Michael's Classical School, (383 9th avenue.)

St. Nicholas's Society.

St. Patrick's School.

St. Paul's Institute, (917 8th avenue.) St. Peter's Academy, (16 Barclay st.)

St. Rose of Lima School.

St. Stephen's Classical School, (142 E. 29th street.)

NEW YORK CITY....St. Stephen's Home of the Sisters of Charity, (138 E. 28th street.)

St. Teresa's Academy, (10 Rutgers st.)

St. Vincent de Paul's Institute, (116 W. 24th street.)

St. Vincent's Hospital, (corner 11th and 7th avenues.)

Sailors' Snug Harbor, (office 156 Broadway.)

Samaritan Home for the Aged, (409 W. 14th, corner 9th avenue.)

Seamen's Exchange Library, (Water and Cherry streets.)

Seamen's Friend Society Library.

Sheltering Arms, (10th ave. and 129th street.)

Shelter for Girls, (334 6th avenue.)

Shepherd's Fold, (Prot. Epis., 36th, E. of 2d avenue.)

Sisters of St. Dominick Asylum.

Sisters of St. Joseph's Church.

Sisters of the Strangers, (4 Winthrop place.)

Smallpox Hospital, (Blackwell's Island.)
Spingler Institute, now Abbott College
Institute.

State Hospital for Diseases of the Nervous Aystem, (corner 2d avenue and St. Mark's place.)

Strangers' Hospital, (avenue D, corner 10th street.)

Society for Collegiate Education at the West, (62 Bible House.)

Society for Employment and Relief of the Poor, (143 E. 13th street.)

Society for protection of destitute Catholic Children, or the New York Catholic Protectory, (29 Reade street.)

Society for Promoting Gospel among Seamen, (72 Madison.)

Society for Relief of Destitute Blind.

154 NEW YORK. NEW YORK CITY....Society for Relief of Half-orphan and Destitute Children, (67 W. 10th st.) Society for Relief of Widows with Small Children, (208 E. 15th street.) Society for the Reformation of Juvenile Delinquents, (61 Bible House.) Sunday School Union, (M. E. Church, 805 Broadway.) Tessin Mutual Benefit Society, (864 Broadway.) Tract Society of Meth. Epis. Church, ' (805 Broadway.) Training Home for Christian Workers, (315 2d avenue.) Transfiguration School. Trinity School. Tumor Dispensary, (101 E. 30th street.) Union Home and School, (151st street and 11th avenue.) Union League, (Madison avenue, corner E. 26th street.) Union Theological Seminary, (9 University place.) United Hands, (56 Orchard street.) University of the City of New York, (Washington Square.) Law School. Medical Department. University Medical College, (foot E. 26th street.) Van Norman Institute. Washington Heights Library, (10th avenue, near W. 160th street.) Washington Institute. Water street Mission and Home for

Women, (273 Water street.) Wayside Industrial Home. Western Dispensary for Women and Children, (242 9th avenue.) Wilson Industrial School for Girls.

NEW YORK CITY Women's Aid Society, (7th avenue, con
W. 13th street.)
Women's Bureau, (49 E. 23d street.)
Women's Home, (45 Elizabeth street.
Women's Home, (262 E. Broadway.)
Women's Library, (38 Bleecker street.
Women's Medical College of the New
York Infirmary, (128 2d avenue.)
Women's Union Missionary Society, (4
E. 21st street.)
Women's Prison Association.
Working Women's Home, (45 Elizabet
street.)
Working Women's Protective Union (38 Bleecker street.)
Yorkville Dispensary, (1476 3d ave.)
Young Ladies' Christian Association (64 Irving Place.)
Young Men's Christian Association, (E
23d, corner 4th avenue.)
Young Men's Christian Union.
Young Women's Home, (28 Washing ton square.)
NIAGARA FALLS St. Mary's School.
NICHOLVILLE Young Men's Christian Association.
NORTH GAGETrenton Union Agricultural Society.
NORTH GRANVILLE_North Granville Ladies' Seminary.
NORTH HAMMOND Agricultural and Mechanical Society.
NORTH HEBRONNorth Hebron Institute.
NORTH HEMPSTEAD_Westbury Farmers' Association.
NORTH SALEMNorth Salem Academy.
NORTH SHOREYoung Men's Christian Association.
NorwichChenango County Agricultural Society
Norwich Academy.
NundaNunda Academy.
NYACKRockland Female Institute.
Union School.
OAKFIELDCary Collegiate Seminary.
OdessaFarmers' Club.
Ogdensburgh Convent of Notre Dame de Victories.
Ogdensburgh Business College.

OGDENSBUEGH Ogdensburgh Medical Association.
Ogdensburgh Educational Institute.
Young People's Association.
Young Men's Christian Association.
OGDEN CENTRE Young Men's Christian Association.
OLEAN Olean Agric. and Hort. Society.
Olean Academy.
Oneida Community.
Oneida Seminary.
Onondaga Valley Farmers and Mechanics' Club.
Onondaga Academy.
Orange Lyceum.

Oswego _____Agricultural College.

Board of Education.
City Library and Mech. Association.
Horticultural Society.
Oswego County Agricultural Society.
Oswego High School.

Oswego Orphan Asylum School.

St. Francis De Sales School.
St. Ann's Select School.
State Normal School.

Young Men's Christian Association.

Ovid _____E. Genesee Conference Seminary.

Willard Asylum for the Insane.

Owego _____Owego Free Academy.

Tioga County Agricultural Society.

Young Men's Christian Association

Young Men's Christian Association.

Oxford ———Oxford Academy.

PALATINE BRIDGE ——Union Free School.

Union Agricultural Society.
Young Men's Christian Association.

PERKSKILL.....Academy of Our Lady of Angels.

Cortland Institute.

Peekskill Academy.

Young Men's Christian Association.

Penfield Seminary.

PENN YAN Farmers' Club.
Penn Yan Academy.

, D <del>V</del>	T. G. ( ) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
PENN IAN	Yates County Agricultural Society.
PERRY	
	Young Men's Christian Association.
PETERBORO	
PHELPS	Phelps Union Classical School.
_	Young Men's Christian Association Young Men's Christian Association.
PIKE	
PLATTSBURGH	Clinton County Agricultural Society.
	Plattsburgh Academy.
	St. Peter's Charity School.
_	Young Men's Christian Association.
	Hamilton Agric. and Mech. Association.
Pompey	
PORT BYRON	Free School and Academy.
PORT CHESTER	Library and Reading-Room.
	Our Lady of Mercy School.
	Moriah Agricultural Society.
PORT JERVIS	_Deer Park Institute.
	Union School.
	_State Normal School.
Potenkeepsie	Cottage Hill Seminary.
	Dutchess County Academy.
	Homeopathic Dispensary.
	Hudson River State Hospital for Insane.
	Law School.
	Lyceum of Natural History.
	Mrs. Bliven's Female Institute.
•	Poughkeepsie Female Academy.
	Poughkeepsic Orphan Home and Home
•	for the Friendless.
	Public Library.
	St. Peter's Charity School.
	Vassar College.
	Young Men's Christian Association.
PRATTSBURG	Franklin Academy.
Pulaski	Pulaski Academy.
RANDOLPH	Chamberlin Institute.
RHINECLIFF	.St. Joseph's College.
RHINEBECK	Red Creek Union Seminary. Rhinebeck Academy.
ATHLM BVILLE	Pro A opoly p comolo.

RICHBURGH .....Richburgh Academy.

RICHMOND......Young Men's Christian Association.

RIDGEWAY.....Agricultural and Horticultural Club.

RIVERHEAD .....Young Men's Christian Association.

ROCHESTER _____Academy of Music.

Athenæum and Mechanics' Association.

Benevolent, Scientific and Industrial School of the Sisters of Mercy.

Board of Education.

Bryant, Stratton & Williams's Business

University. Church Home.

Convent of Mercy.

Court of Appeals.

Female Academy.

Female Charitable Society.

Free Academy.

Home for the Friendless. House for Idle and Truant Children.

House for idle and Truant Unidre

Independent Literary Union.

Industrial School.

Monroe County Agricultural Society.

Monroe County Homeopathic Society.

Monroe County Medical Society.

Monroe County Sportsman's Club.

Orphan Asylum.

Orphan Boys' Asylum

Pioneers of Western New York.

Riverside Seminary.

Rochester City Hospital

Teochester City Hospital

Rochester Lyceum.

Rochester Medical Society.

Rochester Real-Schule.

Rochester Theological Seminary.

St. Aloysius Young Men's Lit'y Asso'n.

St. Mary's Hospital.

St. Patrick's Academy.

St. Fatrick & Adademy.

St. Patrick's Female Orphan Asylum.

University of Rochester.

Theological Seminary.

Western House of Refuge.

## NEW YORK.

ROCHESTER	Western New York Farmers' Club.
ROCKAWAY	Young Men's Christian Association.
ROGERSVILLE	Union Seminary.
Rome	
	St. Peter's School.
	Young Men's Christian Association.
RONDOUT	St. Mary's Female School.
	St. Mary's Institute.
	St. Mary's Male School.
	Young Men's Christian Association.
ROSENDALE	
	_Rushford Union School.
	_Sag Harbor Institute.
	-Washington Academy.
	St. Joseph's Select School.
	Young Men's Christian Association.
	Sand Lake Academy.
	_Sanquoit Academy.
	Temple Grove Ladies' Seminary.
	Saratoga County Agricultural Society.
	St. Peter's School.
	Union School.
	Young Men's Christian Association.
SAUGERTIES	Home for the Friendless.
	Lyceum.
SCHENECTADY	Ladies' Benevolent Society.
	St. Joseph's School.
	Schenectady Lyceum and Academy.
	Union College.
	Adelphic Society.
	Philomathean Society.
	Union School.
	Young Men's Association.
	Young Men's Christian Association.
SCHENEVUS.	Agricultural Society.
Scoharie	
	Scobarie County Agricultural Society
SENECA FALLS	Seneca Falls Academy.
	Union Agricultural Society.
SHERBURNE	Sherburne Union School.
	Independent Rural Agricultural Soct'y.

Sing Sing	Agricultural and Mech. Association.
	Mount Pleasant Academy.
	State Prison.
SKANEATELES	Farmers' Club.
	Union School.
Sodus	_Sodus Academy
Somers	
SOUTH DANSVILLE	Rogersville Union Seminary.
	Hartford Academy.
	Wash. County Agricultural Society.
	Spencertown Academy.
Springville	
	Union Agricultural Society.
Spring Valley	Young Men's Christian Association.
STAPLETON	Mariner's Family Industrial Society
	and Asylum.
	Seamen's Fund and Retreat.
	Young Men's Christian Association.
St. Johnsburgh	Evan. Luth. St. John's School.
STARKEY	Dundee Union Agricultural Society.
	Starkey Seminary.
Success	Riverdale Agricultural Society.
Suspension Bridge	De Veaux College.
	Ecclesiastical Seminary of Our Lady of
	Angels.
SYRACUSE	Business College.
	Catholic Male Select School.
	Catholic Female Select School.
	Franklin Institute.
	High School.
	Home for the Friendless.
	New York State Asylum for Idiots.
	Orphan Asylum.
	Public Library.
	St. Joseph's Asylum School.
	St. Joseph's Hospital.
•	St. Vincent's Orphan Asylum.
	Syracuse University.
•	Young Men's Christian Association.
TARRYTOWN	
THORN HILL	.Farmers' Club.

TREMONT ...... House of Rest for Consumptives. TROY ..... Catholic Select School. Children's Home Society. Christian Brothers' Academy. Day Home. Greenwood Association Library and Museum. High School. Marshall Infirmary for Insane. Renssellaer County Agricultural Soc'y. Renssellaer Polytechnic Institute. Roman Catholic Male Orphan Asylum. Roman Catholic Provincial Theolog. Seminary. St. Joseph's Seminary. St. Mary's Academy. St. Peter's Select School. St. Vincent's Female Orphan School. Troy Academy. Troy Business College. Troy Female Seminary. Troy Hospital. Troy Hospital Dispensary. Troy Orphan Asylum. Young Ladies' Academy. Young Men's Association. Young Men's Christian Association. TRUMANSBURGH ..... Trumansburgh Academy. Unadilla .....Susquehanna Valley Agric. Society. Unadilla Academy. Union Springs____Friends' Academy. UTICA _____Academy of the Assumption. Amicable Library Association. Apprentices' Library. Business College. Home for the Homeless. Mechanics' Association. St. Elizabeth's Hospital and Home. St. John's Female Charity School. St. Patrick's School. St. Vincent's Orphan Asylum.

UTICAState Lunatic Asylum.	
	St. John's Select School.
	Union Farmers' Club.
	Utica Orphan Asylum.
	Utica Academy.
	Utica Female Academy.
	Utica Library.
	Young Men's Association.
	Young Men's Christian Association.
VERNOU	_Agricultural Society.
	Vernon Academy.
VERONA	
	_Thomas Asylum for Orphan and Desti-
·	tute Indian Children.
Victory	_Agricultural Society.
	Walton Academy.
Wallow	Young Men's Christian Association.
WALWORTH	_Walworth Academy.
	Warrensburgh Academy.
	Warsaw Union School.
	Warwick Institute.
WATERFORD	
· · · · · · · · · · · · · · · · · · ·	Young Men's Christian Association.
WATERLOO	Union School
WATERTOWN	
,	Jefferson County Agricultural Society.
	Jefferson County Orphan Asylum.
	Young Men's Christian Association.
WATKINS	_Schuyler County Agricultural Society.
***************************************	Watkins Academy.
WAVERLY	Waverly Institute.
	_Young Men's Christian Association.
	Webster Academy.
	_Young Men's Christian Association.
	_Asylum of the Holy Angels, (for boys
	and girls.)
	St. Raymond's School.
Westfield	_Westfield Academy.
	_Home for Incurables.

WEST HEBRON ...... Union School.

WEST SENECA...... German Evan. Lutheran School.

## NEW YORK.

	•
WEST TROY	
Wollettsburgh	St. Paul's Lutheran Charity School.
West Point	Classical and Mathematical School.
	Observatory.
	United States Military Academy.
Westport	Union School.
WEST WINFIELD	West Winfield Academy.
WHITE HALL	Whitehall Academy.
WHITNEY'S POINT	Union School.
WHITE PLAINS	Westchester County Agric. Society.
WHITESTOWN	Whitestown Seminary.
WILLET'S POINT	United States Engineer Depot Library.
WILLIAMSVILLE	Scientific and Business Institute.
	Williamsville Academy.
WILSON	Wilson Union School.
WINDSOR	.Windsor Academy.
WOLCOTT	Leavenworth Institute.
WOODHULL	Woodhull Academy.
Wyoming	Middlebury Academy.
YATES	
Yonkers	Academy Mt. St. Vincent.
	Family Boarding School for Young
	Ladies.
	Medical Association.
	St. Aloysius School.
	St. John's Riverside Hospital.
Yorkville	
	Riverdale Institute.
	Yorkville Library Association.
	•

# NORTH CAROLINA.

Asheville	Holston Conference Female College.
BELVIDERE	_Belvidere Academy.
Bladen	_Bladen County Agricultural Society.
CARY	_Cary High School.
CHAPEL HILL	_Female Academy.
	University of North Carolina.
	Dialectic Society.
	Law School.
	Normal College.
CHARLOTTE	Biddle Institute.
••	Female Institute.
	Mecklenburg Female College.
	Young Men's Christian Association.
DAVIDSON COLLEGE.	
East Bend	_Male Academy.
EDENTON	_Franklin Literary Club.
FAYETTEVILLE	
	Wake Forest College.
	Commercial Department.
	Euzelian Society.
	· Philomathesian Society.
Goldsboro	Wayne Institute.
	Young Men's Christian Association.
HAPPY Home	_Rutherford College.
	Rutherford Seminary.
HAYESVILLE	_Hicksville Academy.
HILLSBORO	_Female School.
Holly Spring	_High School.
Kenansville	
Kernersville	_High School.
KITTRELL SPRINGS.	
	_Davenport Female College.
Louisburg	Female College.
Madison	Baptist College.
MEBANESVILLE	Bingham School.
Mount Airy	
MOUNT PLEASANT	_North Carolina College.
	Western Carolina Male Academy.
	•

#### NORTH CAROLINA.

•	
Mount Vernon	Male and Female Seminary.
Murfreesboro	Chowan Female Collegiate Institute.
	Female College.
Nashville	Morning Star Institute.
Newbern	Female Seminary.
	Newbern Academy.
New Garden	_Agricultural Society.
	Boarding School.
NEW MARKET	Agricultural Association.
	Randolph Agricultural Club.
NEW INSTITUTE	
Newton	_Catawba College.
Normal College	_Normal College.
OLIN	_Olin College.
Oxford	Oxford Female College.
	St. John's College.
Providence	_Farmers' Club.
	Deaf and Dumb and Blind Institution.
	Female Seminary.
	Insane Asylum.
	Miles High School.
	Raleigh Baptist College.
	St. Augustine Normal School.
	St. Mary's Female College.
•	St. Mary's School.
	Sedgwick Female Seminary.
•	State Agricultural Society.
•	State Library.
	State Prison.
	Young Men's Christian Association.
REED'S CROSS-ROADS	
RICHMOND HILL	
Rockford	
Rохвово	Masonic Classical Institute.
	Fayette Academy.
	Salem Female Academy.
	Salem Library Association.
Sampson	Clinton Female College.
Springfield	
STATESVILLE	Concord Female College.
THOMASVILLE	
	···

TRINITY COLLEGE....Trinity College.

Commercial Department.

Law School.

Scientific Department.

Theological School.

VALLE CRUCIS.....Mission School.

WARRENTON.....Academy.

Female College.

Female Collegiate Institute.

WASHINGTON.____Free School.

Weldon ..... Roanoke Literary Society.

Wentworth...... Male Academy.

WILLIAMSBORO ..... Academy.

WILMINGTON.....Academy of the Incarnation.

Cape Fear Agricultural Society.

Friends' School.

Hemenway Grammar School.

Union Grammar School.

Young Men's Christian Association.

WILSON ..... Arrington Female School.

Wilson Collegiate Seminary.

YADKINVILLE____Yadkinville School.

## OHIO.

Ana	Northwestern Normal School.
AKBON	
	High School.
	Library Association.
	Mechanics' Library.
	Summit County Agricultural Society.
	Young Men's Christian Association.
ALLIANCE	Agricultural Society.
	High School.
Antrim	
	Madison College.
Ashland	High School.
	Young Men's Christian Association.
ASHTABULA	Farmers and Mechanics' Association.
	High School.
	Young Men's Christian Association.
ATHENS	_Agricultural Society.
	High School.
	Ohio University.
	Athenian Literary Society.
	Philomathian Society.
Augusta	Central Agricultural Society.
	Farmers' Club.
	_Grand River Institute.
	_Clermont Agricultural Society.
	_Classical Academy.
BARTLETT	
	_Clermont County Agricultural Society.
	Young Men's Christian Association.
Bellefontaine	Logan County Agricultural Society.
	High School.
Belpre	_Academy.
Berea	Baldwin University.
	Commercial Department.
_	German Wallace College.
Berlin	
	Farmers and Mechanies' Club.
BEVERLY	_Academy.
BEVERLY	

Brooklyn	Academy. Cleveland Institute.
Bucyrus	
	Crawford County Agricultural Society.
	High School.
	Young Men's Christian Association.
BURTON	Geauga County Agricultural Society.
Bryan	Williams County Agricultural Society.
	Cadiz Library Association.
	High School.
Canaan	
	Tuscarawas Co. Agricultural Society.
	Mahoning County Academy.
	Mahoning County Agricultural Soc'ty.
CAMBRIDGE	Guernsey County Agricultural Society.
	Young Men's Christian Association.
CANTON	_Citizens' Library.
	Farmers' Club.
	High School.
	Stark County Agricultural Society.
	Young Men's Christian Association.
CARTHAGENA	St. Charles Borromeo Theolog. Sem'ry.
CARROLLTON	Carroll County Agricultural Society.
	Farmers' Club.
CENTRAL COLLEGE	.Academy.
	Central College.
CHARDON	Young Men's Christian Association.
CHESHIRE	
CHESTER	High School and Institute.
CHESTER + ROADS	
CHEVIOT	
CHILLICOTHE	Commercial College.
	High School.
	Public School Library.
	Young Men's Christian Association.
	Young Men's Gymnasium and Library
	Association.
CINCINNATI	Academy of Fine Arts.
	Academy of Medicine.
	Academy of Sisters Notre Dame.
	American Church Missionary Society.

CINCINNATI.....American Reform Tract and Book Soc.

American Wine-growers' Association.

Apprentices' Library.

Astronomical Society and Observatory.

Boys' Protectorate.

Bryant, Stratton & Dehan's Com. Coll.

Catholic Gymnasium.

Catholic Institute Library.

Celtic Literary Association.

Chickering's Academy.

Chickering Institute.

Children's Aid Society.

Cincinnati College.

Law School.

Cincinnati College of Med. and Surg.

Cincinnati College of Pharmacy.

Cincinnati Horticultural Society.

Cincinnati Hospital.

Cincinnati Literary Club.

Cincinnati Natural History Society.

Cincinnati Orphan Asylum.

Cincinnati Typographical Union.

Cincinnati Union Library Association.

Colored Men's Library.

Colored Orphan Asylum.

Convent of the Good Shepherd.

Convent of St. Francis.

Convent of the Sisters of Mercy.

Convent of the Sisters of St. Francis of the Poor.

MO 1001.

Curran & Kuhn's Boys' School.

Eclectic Medical Institute.

Female Institution.

Female Seminary.

Gen. Theolog. and Relig. Library Asso.

German Library Association.

German Wallace College.

Good Samaritan Hospital.

Gundry's Mercantile College.

Hamilton County Lunatic Asylum.

Hebrew Relief Association.

CINCINNATI _____ Herold's Commercial College.

Historical and Philosophical Society of Ohio.

Home of the Friendless.

House of Refuge.

Hughes High School.

Jewish Hospital Association. Ladies' Union Aid Society.

Lane Theological Seminary.

Law Library.

Literary and Scientific Institute.

Longview Asylum.

McMicken University. Medical College of Ohio.

Medical Library Association.

Mendenhall's Circulating Library.

Miami Medical College.

Mt. Auburn Young Ladies' Institute.

Mt. St. Mary's Seminary.

Theological Department.

Naturalistic Society of Cincinnati.

Naturforscher Gesellschaft, (Naturalist Society.)

Nelson's Business College.

Normal School.

Ohio College of Dental Surgery.

Ohio Mechanics' Institute.

Physio-Medical College of Ohio.

Physio-Medical Institute.

Pioneers' Association.

Protestant Home of the Friendless and Female Guardian Society.

Public Library of Cincinnati. St. Calasanctius Library.

St. George's Society.

St. John's Hospital.

St. Luke's Hospital.

St. Mary's Literary Institute.

St. Vincent de Paul Society.

St. Xavier's Circulating Library.

CINGINNATI.....St. Xavier College.

Commercial Department.

German Literary Society.

Philopædian Society.

Philhermanian Society.

Students' Library Association.

Soc'ty for Promotion of Useful Knowl.

Talmid Yelsdim Scholastic Association.

Theological and Religious Library.

Turnverein.

Western Academy of Natural Science.

Wesleyan Female College.

Young Ladies' Lyceum.

Widows' Home.

Women's Christian Association.

Woodward High School.

Young Ladies' Literary Institute.

Young Men's Sodality.

Young Ladies' Seminary.

Young Men's Christian Association.

Young Men's Christ'n Associa'n, (Ger.)

Young Men's Mercantile Libr'y Asso.

Young People's Library Association.

CIECLEVILLE ..... High School.

Union School.

Lyceum Library.

Young Men's Christian Association.

CLARIDON.....Farmers' Club.

Geauga Co. Free Agricultural Society.

COLUMBIANA.....Young Men's Christian Association.

Agricultural College.

Charity Hospital.

Cleveland Academy.

Cleveland Institute.

Cleveland Library Association.

Cleveland Medical College.

Cleveland University.

Cuyahoga County Agricultural Society.

Farmers' Club.

Female College.

CLEVELAND. Female Seminary.

High School. Homeopathic Med. Coll. for Women.

Kindergarten School.

Kirtland Society of Natural Science.

Med. Dept. University of Wooster. Mercantile College.

Ohio State and Union Law College.

Orphan Asylum.

Public Library. St. Mary's Ecclesiastical Seminary.

Union Business College.

Ursuline Academy. Western Homeopathic College.

Western Reserve Historical Society.

Young Men's Christian Association.

Young Men's Institute.

COOLVILLE....Seminary. College Hill____Farmers' College.

Ohio Female College

COLUMBUS.....Agricultural and Mechanical College. Business College.

Capital University.

Theological Department.

Central Ohio Lunatic Asylum.

Columbus Circulating Library.

Farmers' Club.

Franklin Business Institute.

Franklin County Agricultural Society.

Franklin County Pioneer Association.

Free Circulating Library and Reading

Rooms.

Hannah Neil Mission.

Hare Orphan Home.

High School.

Home for the Friendless.

Holy Cross School.

Horticultural Society. House of the Good Shepherd.

Institution for the Blind.

Institution for the Deaf and Dumb.

COLUMBUSOhio Asylum for Imbecile and Feeble-	
	minded Youth.
	St. Mary's School.
	St. Elizabeth Orphan Society.
	St. Patrick's School.
	St. Francis Hospital.
•	St. Aloysius Seminary.
	St. Mary's Academy.
	Starling Medical College.
	State Board of Agriculture
	State Library.
	State Prison.
•	Tyndall Association.
	Young Men's Christian Association.
Coshocton	_High School.
DAMASCOVILLE	_Farmers' Club.
•	Young Men's Christian Association.
DAYTON	Cooper Female Seminary.
•	Dayton Library Association.
	Female Academy.
	High School.
	Montgomery Co. Agricultural Society.
	Montgomery Co. Horticultural Society.
	Sisters of Notre Dame Seminary.
•	Southern Ohio Lunatic Asylum.
	St. Joseph's Boarding School.
	St. Mary's Institute.
	Young Men's Christian Association.
DEERFIELD	Agricultural Society.
Defiance	Defiance Co. Agricultural Society.
DELAWAREHigh School.	
	Ohio Wesleyan Female College.
	Ohio Wesleyan University.
	Allen Missionary Lyceum.
	Athenian Society.
	Chestomathean Society.
	Theological Seminary.
	Zetagathean Society.
	Young Men's Christian Association.
Downington	De Camp Institute.

East Fairfield .... Agricultural Society. Young Men's Christian Association. East Liverpool.....Young Men's Christian Association. EATON ____High School. Preble County Agricultural Society. EDINBURGH _____Agricultural Society. ELYRIA.....Farmers' Club. High School. Lorain County Agricultural Society. Young Men's Christian Association. Ewington.....Academy. Literary Institute. FAYETTEVILLE ____St. Patrick's Boarding School. Ursuline Academy. FINDLEY.....Agricultural Society. High School. Young Men's Christian Association. FREMONT ..... Sandusky County Agricultural Society. Young Men's Christian Association. GALION.....Academy. High School. Gallipolis .....Gallia Academy. Gallia County Agricultural Society. High School. GAMBIER____Kenyon College. Nu Pi Kappa Society. Philomathesian Society. Theological Seminary. GARRETTSVILLE____Agricultural Association. GENEVA .....Young Men's Christian Association. Normal School. GEORGETOWN ..... Brown County Agricultural Society. GLENDALE.....Glendale Female College.

Goshen ____Seminary

Granville.....Denison University.

Calliopean Society. Franklin Society.

Farmers' Club.
Female College.
Female Seminary.
Library Society.

GRANVILLE	Male Academy.
	Young Ladies' Institute.
	Young Men's Christian Association.
GREENVILLE	Darke County Agricultural Society.
Hamilton	_Boarding and Day School.
	High School.
	Young Men's Christian Association.
HAMMONDSVILLE	
	Franklin Library Association.
HARLEM SPRINGS	Harlem Springs College.
	Rural Seminary.
HAYESVILLE	_Vermilion Institute.
HILLSBORO	Highland Co. Agricultural Society.
	Highland Institute.
	High School.
	Hillsboro Female College.
	Oakland Female Seminary.
	Sigourney Library.
	Young Men's Christian Association.
HIBAM	_Hiram College.
	Western Res. Eclectic Institute.
	McNeely Normal School.
Hudson	_Ladies' Seminary.
	Western Reserve College.
	Medical Department.
	Observatory.
	Phi Delta Society.
	Philogethian Society.
	_Ohio Central College.
IRONTON	
	Ironton Library Association.
	Lawrence County Agricultural Society.
	Young Men's Christian Association.
JACKSON	_Jackson County Agricultural Society.
	_Union Agricultural Society.
JANESVILLE	
Jefferson	Ashtabula County Agricultural Society.
	Historical Society of Ashtabula County.
	Jefferson Library.
Kennard	Farmers' Club.

KENTON .....Hardin County Agricultural Society. High School. KINGSVILLE ..... Kingsville Academy. LANCASTER ......Fairfield County Agricultural Society. High School. Hocking Valley Horticultural Society. State Reform School. LEAVITTSBURG ____Trumbull County Agricultural Society. LEBANON ......National Normal School. Warren County Agricultural Society.

Warren County Horticultural Society. LEE ____Atwood Institute. Lewis Centre ____Farmers' Club.

LEXINGTON ......Young Men's Christian Association. LIMA .....High School. Union College.

LOCKLAND Young Men's Christian Association. LOVELAND ......Agricultural and Horticultural Society. LOGAN ......Hocking County Agricultural Society.

High School. Louisville .....St. Louis College. Lucas ......Young Men's Christian Association. Madison-----High School.

Madison Seminary. Mansfield Library Association.

Richland Agricultural Society. Young Men's Christian Association.

MARIETTA ....High School. Marietta College. Alpha Kappa Society.

> Psi Gamma. Society of Inquiry. Marietta Historical Association.

> Marietta Library.

'Washington Co. Agric. and Mech. Ass'n. MARION ..... Marion County Agricultural Society. MARTINSBURG ..... Seminary.

MARYSVILLE ...... High School.

Union County Agricultural Society.

Massillon	Young Men's Christian Association.
	_Central Ohio Conference Seminary.
	High School.
	Rotch Charity School.
McConnellsville.	Morgan County Agricultural Society.
	Sandy Valley Agricultural Society.
MEDINA	
	Medina County Agricultural Society
Middletown	-High School.
	Young Men's Christian Association.
MILAN	-Western Reserve Normal School.
	Long View Asylum.
	Holmes County Agricultural Society.
MILLVILLE	Butler County Agricultural Society.
	_Boarding School of the Visitation.
	-Hamilton County Agricultural Society.
Morning Sun	
	_Horticultural Society.
MOUNT AUBURN	Young Ladies' Institute.
MOUNT GILEAD	Young Men's Christian Association.
MOUNT PLEASANT	_Friends' Boarding School.
MOUNT UNION	_Fairmount Agricultural Club.
	Linnean Library.
	Mt. Union College.
	Commercial Department.
	Normal Department.
MOUNT VERNON	
	High School.
	Knox County Agricultural Society.
	Young Men's Christian Association.
	Henry County Agricultural Society.
NEW ATHENS	
Newburg	_North Ohio Lunatic Asylum.
	Young Men's Christian Association.
Newark	
	High School.
37 A	Licking County Agricultural Society.
	Muskingum College.
New Hagerstown	
NEW LISBON	_Columbiana County Agricultural Soc'ty.
10	High School.

NEW MARKET	New Market College.
NEW PLYMOUTH	
	_Clermont Academy.
	Union School.
NEWTON	Wool Growers' Association.
	_Glade Run Agricultural Society.
	Firelands' Historical Society.
	High School.
	Public Library.
OBERLIN	Agricultural and Horticultural Society.
•	High School.
	Oberlin College.
	Normal Department.
	Scientific Department.
	Theological Department.
	Phi Delta Society.
	Phi Kappa Pi Society.
	Union Society.
	Young Men's Christian Association.
ORWELL	_Agricultural Society.
	Normal Institute.
OTTOKEE	_Fulton County Agricultural Society.
Oxford	
	Miami University.
	Oxford Female College.
	Erodelphian Society.
	Theological Seminary Asso. Ref. Ch.
	Western Female Seminary.
PAINESVILLE	_High School.
•	Lake Erie Female Seminary.
	Lake County Agricultural Society
	State Horticultural Society.
	Young Men's Christian Association.
PAGEVILLE	_De Camp Institute.
PATASKALA	_Agricultural Society.
Paulding	Paulding County Agricultural Society.
PIERPONT	Pierpont Academy.
	_Fairfield Union Academy.
Piqua	-High School.
POLAND	_Union Seminary.

PORTSMOUTH	_High School.
	Our Club.
	Scioto County Agricultural Society.
	Young Ladies' Seminary.
	Young Men's Christian Association.
POMEROY	
	Meigs County Agricultural Society.
	Pomeroy Academy.
POTTER	-Farmers and Mechanics' Club.
PUTNAM	
QUAKER BOTTOM	•
RAVENNA	
	Portage County Agricultural Society.
	Young Men's Christian Association.
READING	Notre Dame Female Seminary.
	_Northwestern Normal School.
RICHMOND.	
	Brown County Industrial Association
	High School.
	Library Association.
	Young Men's Christian Association.
SALEM	High School.
	Young Men's Christian Association.
SANDUSKY	
	Erie County Agricultural Society.
	Young Men's Christian Association.
SARAHSVILLE	Noble County Agricultural Society.
	_Savannah Academy.
	Scientific Association.
Scro	_New Market College.
SEVEN MILE	
	_Young Men's Christian Association.
Shelby	
SIDNEY	Young Men's Christian AssociationHigh School.
	Shelby County Agricultural Society.
SMITHVILLE	
Solon	
	_St. Mary's Female Seminary.
	St. Joseph's College
South Salem	Academy.
	<b>▼</b>

Springdale	Young Men's Christian Association.
Springmount	
St. Clairsville	Belmont County Agricultural Society.
	High School.
Springfield	Clarke County Agricultural Society.
	Female Seminary.
	Greenway Boarding School.
	High School.
	Wittenberg College.
	Excelsior Society.
	Philosophian Society.
	Theological Seminary.
	Young Men's Christian Association.
STEUBENVILLE	
	Female Seminary.
	Friends' Seminary.
	High School.
	Steubenville Seminary.
	Third Street Seminary.
	Young Men's Christian Association.
TALLMADGE	Academical Institute.
Tiffin	Heidelberg College.
	Delphian Society.
	Gorthean Society.
	Excelsior Society.
	Heidelberg Society.
	Star Society.
	High School.
	Seneca County Agricultural Society.
	Seneca Library Association.
	Theological Seminary of Ger. Ref. Ch.
	Webster Literary Association.
	Young Men's Christian Association.
Toledo	High School.
	Law Association.
	Lucas County Agricultural Society.
,	Lucas County Horticultural Society.
	Society of Natural Sciences.
•	Ursuline Academy.
-	Young Men's Association.
	Young Men's Christian Association.

TONTOGANY......Wood County Agricultural Society. TRENTON......Young Men's Christian Association. TROY____High School. Miami County Agricultural Society. TUPPER'S PLAINS....Plains Seminary. Twinsburg Institute. UPPER SANDUSKY ... Wyandot County Agricultural Society. URBANA.....High School. Library Association. Urbana University. Young Men's Christian Association. WARREN.....High School. Young Men's Christian Association. Washington ..... Franklin Library. Fayette County Agricultural Society. Jefferson Society. · Miller Academy. Philo Society. WELLSVILLE____Cleveland and Pittsburg Railroad Reading Room Association. High School. WESTERVILLE ____Otterbein University WEST FARMINGTON. Western Reserve Seminary. WEST LIBERTY ..... High School. Whipstown____Salt Lick Agricultural Society. WILLIAMS'S CENTRE_Academy. Winona____Farmers' Institute. WILLOUGHBY ..... Collegiate Institute. Commercial Department. High School. WORTHINGTON.____Central Normal School. Woodsfield ..... Monroe County Agricultural Society. WOOSTER ..... Grove Female Seminary. High School. Wooster University. Athenean Society. Irving Society. Wayne County Agricultural Society. _Associate Theological Seminary.

Greene County Agricultural Society.

OHIO.

XENIA.....High School.

Wilberforce University.

Law Department.

Theological Department.

Normal Department.

Xenia College.

Young Men's Christian Association.

YELLOW SPRINGS .... Antioch College.

Young Men's Christian Association.

ZANESVILLE......High School.

MacIntyre Academy.

Muskingum County Agricultural Soci-

etv.

Putnam Female Seminary.

St. Columba's Academy.

Young Men's Christian Association.

Zanesville Atheneum.

## OREGON.

ALBANY	-Albany Collegiate Institute.
	Albany Library and Literary Institute.
	Linn County Agricultural Association.
BAKER CITY	
CORVALLIS	_Corvallis College, (agricultural.)
	Oregon Hospital for the Insane.
	Oakland Academy and St. John's High
	School.
	Union University.
Forest Grove	
Jacksonville	
	Academical Institute.
	Presbyterial Academy.
Durat million	Yamhill Agricultural Society.
LEBANON	
McMinnville	
Monmouth	
	Oregon City University.
Oswego	
	_Academy and Female Seminary.
I ORILAND	Bishop Scott Grammar School.
	High School.
	Library Association.
	St. Helen's Hall.
	St. Mary's Academy.
D	Young Men's Christian Association.
	Philomath College.
	-Umpqua Academy.
SALEM	Institution for Deaf and Dumb.
	St. Mary's Academy.
	State Library.
	State Prison.
	Willamette University.
	Law Department.
	Medical Department.
St. Paul	St. Mary's Academy.
SUBLIMITY	
WILBUR	_Academy.
	·~·

#### PENNSYLVANIA.

AARONBURG ..... Aaronburg Academy. Aaronburg High School. Howard High School. ABINGTON CENTRE ... Abington Academy. ACADEMIA.....Tuscarora Academy. AIRY VIEW.....Airy View Academy. ALEXANDRIA......Porter Township Agricultural Club. ALLEGHANY CITY___Alleghany Observatory. Avery College. Everett Literary Society. Public School Library. St. Peter's Academy. St. John's Academy. Society of Natural Science of Western Pennsylvania. Theological Seminary of the Associate Reformed Church. United Presbyterian Theological Seminary. Western Theological Seminary. ALLENTOWN.____Allentown Academy. Allentown Seminary. Female College. High School. Lehigh County Agricultural Society. Masonic Library Association. Muhlenberg College. Euterpian Literary Society. Pennsylvania Military Institute. Young Men's Christian Association. __Altoona Mechanics' Library and Reading Room Association.

High School.

Andalusia College.

Andersonburg.....Farmers' Club.

Young Men's Christian Association.

### PENNSYLVANIA.

Annville	Lebanon Valley College.
	Commercial Department
Ashland	Literary and Scientific Institute.
ATHENS	Athons Academy.
ATTLEBORO	
	Bucks County Agricultural Society and
	Mechanics' Institute.
Beaver	Beaver County Agricultural and Horti-
	cultural Society.
	Beaver Seminary.
	Female Academy.
	Young Men's Christian Association.
BEDFORD	Bedford Classical School.
	Rittenhouse College.
BEECH CREEK	Beoch Creek Graded School.
_	Clinton County Agricultural Society.
Beers	
Bellefonte	Agricultural College.
	Bellefonte Academy.
	Centre County Agricultural Society.
	Young Men's Christian Association.
	Berrysburg Academy.
BETHANY	Conference Seminary.
	University of North Pennsylvania.
Ветньенем	•
	Moravian College.
	Moravian Seminary for Young Ladies.
	Young Men's Christian Association.
	Young Men's Missionary Society.
	Mountain Female Seminary.
BLAIRSVILLE	
	Literary and Scientific Society.
BLOOMSBURG	Columbia County Agricultural, Horti-
	cultural, and Mechanics' Association.
•	State Normal School.
	Young Men's Christian Association
	_Boalsburg Academy.
	Mount Pleasant Seminary.
	Bradford Academy.
	Young Men's Christian Association.
Brainerd	-Young Men's Christian Association.

BRIDGEPORT .....Union School. Bristol College. BROOKVILLE Barclay Library. Brookville Academy. Young Men's Christian Association. Brownsville____Young Men's Christian Association. BURGETTSTOWN____Union Agricultural Society. Union Farmers' Club. Young Men's Christian Association. BUTLER....Butler County Agricultural and Stock Association. Farmers' Society. Witherspoon Institute. Young Men's Literary Association. BYBERRY.....Byberry Library. Philosophical Society. CALLENSBURG_____Callensburg Academy. Male and Female Institute. Philosophical Literary Society. Young Men's Christian Association. California.....South Western Normal School. CANDOR _____Young Men's Christian Association. CANNONSBURG ..... Theological School. Young Men's Christian Association. CARBONDALE.....Lackawanna Institute. Young Men's Christian Association. CARLISLE ____Cumberland County Agricultural Society. Dickinson College. Belles Lettres Society. Law School. Union Philosophical Society. Emory Female College. Ingham Female Seminary. Mary Institute. Young Men's Christian Association. CABMICHAEL'S ...... Greene County Agricultural and Mechanical Society.

Cassville Cassville Soldiers' Orphans' School.
Centre Young Men's Christian Association.

Силиререрира	Chambersburg Academy.
CHARDEBBURG	Franklin County Agricultural Society.
	Franklin County Horticultural Society.
	Farmers and Mechanics' Industrial As-
	sociation.
	Robison's Free Library.
	Wilson Female College.
CHESTER	Chester Library Company.
	Chester Seminary.
	Crozer Academy.
	Young Men's Christian Association.
CLARION	
	Young Men's Christian Association.
CLEARVIELD	Clearfield County Agricultural Society.
	Young Men's Christian Association.
COLLEGEVILLE	Pennsylvania Female College.
COLUMBIA	
	Crawford County Agricultural Society.
	Connellsville Academy.
	Preparatory School.
	Union School.
	Young Men's Christian Association.
CONTROLLA	Sugar Loaf Seminary.
	. Maplewood Classical and Normal Inst.
	Cooperstown Academy.
Conner	Young Men's Christian Association.
	Young Men's Christian Association.
DANVILLE	
DANVILLE	•
	Danville High School.  Danville Institute.
	Hospital for Insane, (of Northern district of Penna.)
DARBY	Sharon Observatory.
•	Darby Library.
•	Darby Academy of the Holy Child.
DATTON	Dayton Academy.
DOE RUN	Farmers' Social Union.
	Octararo Farmers' Club.
Deerfield	Deerfield Academy.
DEWART	
	Young Men's Christian Association.
	<b>3</b>

Doylestown Library. Doylestown Seminary Doylestown Seminary
Dunbar ......Young Men's Christian Association.

Easton Library Company.

Farmers and Mechanics' Institute. Lafayette College.

Brainerd Evangelical Society. Franklin Society.

Washington Society. Young Men's Christian Association.

East Whiteland ... Young Men's Christian Association. EBENSBURG _____Ebensburg Lyceum.

Mt. Galitzin Seminary. ECONOMY .....Economy Library.

EDINBORO ____State Normal School. ELDERTON _____Academy.

Eldersridge ____Academy. ERIE.....City Library.

Erie Academy. Erie County Agricultural Society. Everett Literary Society.

> High School. Irving Literary Institute.

St. Joseph's Convent School.

State Marine Hospital.

Young Men's Christian Association.

EWING'S MILLS.....Robinson Township Agricultural Club.

FALLSINGTON .....Fallsington Library Company. FRANKFORD ..... Friends' Asylum for Insane.

Wright's Industrial Beneficial Institute. Young Men's Christian Association.

Franklin _____Young Men's Christian Association. FREDERICK .....Frederick Institute.

FREEBURG.....Academy.

Snyder County Agricultural Society.

FREELAND ...... Ursinus College. Theological Department.

Fogelsville Academy.

FREEPORT....Freeport Academy.

GERMANTOWN ..... Aertsen and Stevens's Young Ladies School.

### PENNSYLVANIA.

GERMANTOWN.	_Barker's Collegiate Institute.
	Friends' Library.
	Friends' School.
	Germantown Academy.
	Germantown Hospital.
	Germantown Public School.
	Lutheran Orphan Asylum and Home.
	Madame Clements's French Protestant
	School.
	Normal School.
	Public Library.
	St. Vincent de Paul's Boys' School.
	St. Joseph's Girls' School.
	Young Men's Christian Association.
GETTYSBURG	Adams County Agricultural Society.
GEIII I BBUBU	Gettysburg Female Academy.
	Lutheran Historical Society.
	Pennsylvania College.
	Education Society.
	•
	German Society.
•	Linnæan Society.
•	Philomathean Society.
	Phrenakosmian Society.
	Theological Seminary of General Synod
_	of Lutheran Church.
	Agricultural Library Association.
	Glade Run Academy.
	Preparatory Seminary, (Rom. Cath.)
	_Union Library Association.
GREAT BEND	Young Men's Christian Association.
Greensburg	Westmoreland County Agric. Society.
	Young Men's Christian Association.
	_Young Men's Christian Association.
	Haddington College.
HANOVER	_Young Men's Christian Association.
Harford	_Franklin Academy.
•	Harford University.
HARLEYSVILLE	Cassel's Library.
	Dauphin County Agricultural Society.
•	Harrisburg Academy.
	Harrisburg Female Seminary.
	•

HARRISBURG.....High School. State Agricultural Society.

State Library. State Lunatic Hospital.

Young Men's Christian Association. HARRISONVILLE____Young Men's Christian Association. HARTSVILLE _____Tennent School.

HATBORO....Loller Academy. Union Library.

Young Ladies' Institute.

HAZLETON......Hazleton Graded School.

Hollidaysburg ____Blair County Agricultural Society. Female Seminary.

Young Men's Christian Association. Holmesburg......Young Men's Christian Association.

Honesdale Academy.

Honesdale Literary Institute. Wayne County Agricultural Society. Hopewell ..... Classical School.

Huntingdon Co. Agricultural Society.

Huntingdon Select School. Young Men's Christian Association.

HYDE PARK.....Academy. Indiana County Agricultural Society.

Jacksonville.....Academy. Jamestown Seminary.

Lyceum.

JERSEY SHORE ..... West Branch High School. Young Men's Christian Association.

Johnstown.....St. John's Academy: Young Men's Christian Association.

Jonestown____Swatara Library Institute.

Kellyville ..... Hospital for Insane.

KENNETT SQUARE....Academy. Farmers' Club.

Seminary.

King of Prussia .... Union Library of Upper Merion.

Kingston.....Bennett Library.

Wyoming Seminary. Young Men's Christian Association

KISHACOQUILLAS	Kishacoquillas Seminary
KITTANNING	_Columbia University.
	Kittanning Academy.
	Kittanning Female Institute.
	Literary Society.
	Lambeth College.
	Young Men's Christian Association.
Kutztown	_State Normal School.
LANCASTER	
	Franklin and Marshall College.
	Diagnothian Society.
	Goethian Society.
	Historical, Agric., and Mech. Institute
	High School.
	Lancaster Co. Agricultural Society.
	Lancaster Co. Horticultural Society.
	Linnæan Society.
	Mechanics' Library.
	State Fruit-growers' Society.
	Theological Seminary.
	Yeates Institute—Training School for
	the Ministry.
	Young Men's Christian Association.
LAPORTE	Sullivan County Agricultural Society.
	_St. Vincent's College.
	St. Xavier's Academy.
LAWRENCEVILLE	_Lawrenceville Academy.
	Young Men's Christian Association.
LEBANON	_Lebanon Co. Agricultural Society.
	Leechburg Institute.
LEHIGHTON	
Lewisburg	
	Union County Agricultural Society.
	University at Lewisburg.
	Euepian Society.
	Theta Alpha.
	Theological Department.
4	University Female Institute.
Lewistown	_Lewistown Academy.
LINCOLNVILLE	Young Men's Christian Association.
LINE LEXINGTON	
LINE LEAINGIUN	_~~······················.

LOCKHAVEN____Clinton County Agricultural Society.

Lockhaven Select School.
Union Graded School.

Linden Hall Moravian Seminary.

LINGLESTOWN .....Linglestown Institute. LITIZ.....Boys' Academy.

LORETTO_____St. Aloysius Academy.

Loderville____Academy.

St. Francis College. Lower Merion ..... Young Men's Christian Association. LYCOMING CREEK .... Young Men's Christian Association. MAHANOY CITY_____Mahanoy Valley Horticultural Society. MARIETTA .....High School. Susquebanna Institute. MANSFIELD.....Classical Institute. State Normal School. Mantua Library. McKeesport ...... Western Seminary. McKeesport Acad. and Fem. Seminary. Young Men's Christian Association. McVeytown.....Mattawana School. MEADVILLE.....Alleghany College. Alleghany Literary Society. Philo-Franklin Literary Society. City Library and Richmond Museum. Intern. Business College. Meadville Academy. Meadville Female Seminary. Meadville Theological School. St. Bride's Academy. Young Men's Christian Association. MACALLISTERVILLE __ Macallisterville Academy. MECHANICSBURG ..... Cumberland Valley Institute. Farmers' Club. Irving Female College. Mutual Improvement Society. Brooke Hall Female Seminary. Delaware County Institute of Science. Delaware Co. Farm Stock Association. Galey's Boarding School. Media Academy.

Media	Pennsylvania Sanitarium, (for treat- ment of alcoholic and opium intox- ication.)
	Training School for Feeble-minded Chil-
	dren.
Mercer	Young Men's Christian Association.
	Theological Seminary Ger. Reformed
	Church.
MIDDLETOWN	Young Men's Christian Association.
MIFFLINBURG	_Mifflinburg Academy.
MILL CREEK	Young Men's Christian Association.
MILLERSTOWN	Macungie Institute.
MILLERSVILLE	State Normal School.
	Normal Literary Society.
•	Page Literary Society.
MILLVILLE	.Greenwood Farmers' Club.
	Greenwood Seminary.
MILTON	Northumberland Co. Agricult. Society.
Monongahela City.	Everett Literary Club.
	Monongahela Valley Agricultural and
	Horticultural Society.
Montrose	Montrose Academy.
	Susquehanna Agricultural Society.
	.Morgantown Academy.
MOUNT BETHEL	
MOUNT JACKSON	Young Men's Christian Association.
MOUNT JOY	Academy.
	Female Seminary.
	Young Men's Christian Association.
Mount Pleasant	Mount Pleasant Union College.
	Westmoreland College.
MOUNTVILLE	Mountville Library and Reading-room
	Association.
MUNCY	Muncy Female Seminary.
Myerstown	Palatinate College.
	Moravian Historical Society.
	Nazareth Hall School.
	Northampton Co. Agricultural Society.
	Young Men's Christian Association.
NEW BERLIN	
	New Bethlehem Academy.
13	47

New Bloomfield ... Perry County Agricultural Society.

New Britain____New Britain Seminary.

NEWBURG.....Sunnyside Institute. NEW CASTLE ...... New Castle Graded School. New Castle Horticultural Society. New Castle School for Teachers. Young Men's Christian Association. NEW COLUMBUS..... New Columbus Academy. New Cumberland ... Young Men's Christian Association. NEW MILFORD ..... New Milford Select School. St. Joseph's College. NEW PROVIDENCE ___School District Library. New Sheffield ..... Young Men's Christian Association. NEW WILMINGTON ... New Wilmington Graded School. Westminster College. Ciceronian Literary Society. Norristown Library Company. Oakland Female Seminary. Tremont Seminary. Young Ladies' Literary and Library Association. NORTH EAST.....Young Men's Christian Association. NORTH STONINGTON... North Stonington School. OIL CITY.____Oil City Library Association. ORANGEVILLE _____ Male and Female Seminary. ORWIGSBURG.....Academy. Schuylkill County Agricultural Soc'ty. Oxford....Lincoln University. Garnet Literary Association. Law Department. Medical Department. Normal Department. Philosophian Society. Theological Department. Oxford Female Seminary.

PARKERSBURG......Young Men's Christian Association.
PARKER'S LANDING...Young Men's Christian Association.
PENN'S SQUARE......Montgomery County Agricultural So-

ciety

Perkiomen Bridge...Pennsylvania Female College.

Freeland College.

Petroleum Centre ... Young Men's Christian Association.

PHILADELPHIA ...... Academy of Fine Arts.

Academy of the Immaculate Heart.

Academy of Natural Science.

Academy of Notre Dame.

Academy of the Sacred Heart. African School, (Meadow street.)

African School, (Pearl and 13th.)

Aimwell School Association. American Baptist Publication Society.

American Medical Association.

American Pharmaceutical Association.

American Philosophical Society.

American Sunday School Union.

Apprentices' Library Company.

Art Association.

Associa'n for care of Colored Orphans.

Assoc. Inst. for Soldiers and Sailors'

Orphans.

Asylum for Relief of Persons deprived of use of Reason.

Athenæum.

Blessed Peter Clavers Academy.

Baptist Home of Philadelphia.

Bible Associa'n of Friends in America.

Bishop Potter Memorial House.

Bishop White Parish Library Associa'n.

Bishop White Prayer-book Society. Board of Education of the Presbyterian

Church in the United States. Board of Missions of Presby. Church.

Burd Orphan Asylum of St. Stephen's

Church.

Business College.

Carpenters' Company.

Cathedral Academy.

Catholic Home for Destitute Orphan Girls.

PHILADELPHIA .... _Catholic School, (1708 Somerset st.) Catholic School, (Centre street.)

Central High School.

Observatory. Charity Hospital of Philadelphia.

Chestnut Street Female Seminary.

Children's Home, (41st and Venango.)

Children's Home, (12th street.) Children's Hospital.

Christ Church Hospital.

Christ Church Library. Church of Assumption School, (12th

below Green.) Citizens' Association, (800 Arch street.)

College Avenue Anatomical School.

College of Dental Surgery. College of Pharmacy.

College of Physicians.

College of St. Charles.

Colored School, (229 Raspberry street.) Controllers of Public Schools' Library.

Convent of the Sacred Heart. Crittenden's Commercial Busi. College.

College of St. Thomas of Villa Nova.

Dial Library, (1600, S. 5th street.)

Eastern State Penitentiary.

Educational Home for Boys.

Episcopal Hospital. Episcopal Library and Reading-room.

Fairmount Female College.

Female Associa'n for Colored Orphans.

Female Medical College.

Florence Literary Institute and Lib'ry.

Foster Home, (24th and Poplar.)

Franklin Institute.

Free Reading-room Associat'n of Spring

Free School, (Thurlow st., near 13th.)

Friends' Asylum for the Insane.

Friends' Charity School, (Ross street.) Friends' Library.

PHILADELPHIA .....Friends' Observatory.

Friends' School Corporation, (N.7th st.)

Friends' School, (Pine street.)

Friends' School, (North 11th.)

Friends' School, (Wagner's alley.)

German Hebrew Society, (Julianna, below Callowhill.)

German Hospital.

German Society.

Girard College for Orphans.

Girls' High School.

Girls' Normal School. Hahnemann Medical College.

Hebrew Education Society Home.

Historical Society of Pennsylvania.

Home for Destitute Colored Children.

Home for the Homeless.

Homeopathic Hospital.

Homeopathic Medical College.

Hospital of Protestant Epis. Church in Philadelphia.

House of Good Shepherd, (22d street.)

House of Refuge.

Howard Hospital and Infirmary for Incurables.

Howard Institution.

Howard School, (Shippen street.)

Indian's Hope Association.

Industrial Home for Blind Women.

Industrial Home for Girls.

Institute for Colored Youth.

Institution for the Blind.

Institution for the Deaf and Dumb.

Institute for Young Ladies, (Arch st.)

Jewish Foster Home.

Jewish Hospital.

Jefferson Medical College.

Kensington Literary Institute. .

Lasalle College.

Commercial Department.

Laurel Hill College.

PHILADELPHIA ..... Law Academy.

Law Association.

Library Association of Friends.

Library Company of Philadelphia and Loganian Library.

Library of the Four Monthly Meetings

of Friends.

Lincoln Institution for Soldiers' Or-

phans, (11th street.)
Lutheran School, (Cherry street.)

Lutheran Theological Seminary.

Magdalene Asylum, (Race and 23d.)

Magdalen Society of Philadelphia. Maimonides College.

Mantua Academy.

Mechanics' Institute of Southwark.

Mechanics' Lib'ry, (5th, near Wash. av.)

Medical Department Penn's College.

Medical Depart. University of Penn'a.

Medical Institute of Philadelphia.

Medico-Chirurgical Society.

Mercantile Library Association.

Midnight Mission.

Mission Home of the P. E. Church.

Miss Pindoll's Institute.

Mission School, (Locust street.)

Moyamensing Hall School.

Moyamensing Literary Institute.

Musical Fund Society.

musical ruliu Society

Natatorium.

Nautical and Engineering College of Philadelphia.

Newsboys' Home.

Northern Dispensary of Philadelphia.

Northern Home, (Brown, above 22d.)

North. Home for Friendless Children.

Northern House of Industry.

Northern Liberties Franklin Library.

Northern Medical Association.

Numismatic and Antiquarian Society.

Obstetrical Society of Philadelphia.

PHILADELPHIA ..... Old Man's Home.

Ophthalmological Society.

Orphans' Asylum, (18th and Cherry.)

Orphans' Home, (Mt. Airy.)

Orphans' Home and Asylum for the Aged and Infirm of Lutheran Church.

Orphan Society of Philadelphia.

Orthopædic Hospital.

Page Library.

Pathological Society.

Pennsylvania Bible Society.

Pennsylvania College of Dental Surgery.

Pennsylvania Colonization Society.

Pennsylvania Horticultural Society.

Pennsylvania Hospital.

Pennsylvania Hospital for the Insane.

Pennsylvania Military College.

Pennsylvania Seamen's Friend Society.

Pennsylvania Society for Prevention of

Cruelty to Animals.

Pennsylvania State S. S. Association.

Pennsylvania Widow's Asylum, (Belgrade street.)

Philadelphia City Institute.

Philadelphia College of Medicine.

Philadelphia College of Pharmacy.

Philadelphia Dental College.

Philadelphia Hospital, (Blockley.)

Philadelphia Library Association of Colored Brethren.

Philadelphia School of Anatomy.

Philadelphia Society for the Poor.

Philadelphia Society for Promoting

Agriculture.

Philada. School of Design for Women.

Philadelphia Chemical College.

Philadelphia Dispensary.

Philadelphia Tract and Mission Soc'ty.

Philadelphia Society for Alleviating the Miseries of Public Prisons.

PHILADELPHIA .... Pierce's Union Business College.

> Polytechnic University. Philotechnic Society.

Presbyterian Alliance.

Presbyterian Board of Education. Presbyterian Board of Publication.

Presbyterian Historical Society. Presbyterian Home for Widows and

Single Women.

Presbyterian Hospital.

Preston Retreat, (Hamilton, ab. 20th.) Protestant Episcopal Divinity School. Protestant Episcopal City Mission.

Public Library for People of Color. Quaker City Business College.

Quaker School, (Randolph, ab. Parrish.) Rand Scientific Association.

Roman Catholic School, (11, ab. Master.) Rosine Association, (Germantown road.) Roxboro Lyceum.

Saunders College. St. Ann's Widows' Asylum.

St. Augustine's Academy. St. Charles Borromeo Seminary.

St. John's Male Orphan Asylum.

St. Joseph's Academy.

St. Joseph's Charity School, (Lombard street.) St. Joseph's College.

St. Joseph's Female Orphan Asylum.

St. Joseph's Hospital. St. Luke's Church Home.

St. Leonard's Academy.

St. Mary's Academy.

St. Mary's Hospital.

St. Michael's Church School, (Oldham street.)

St. Patrick's Academy. St. Patrick's School, (Locust street.)

St. Philip de Neri's Academy.

St. Vincent's Home, (18th, ab. Wood.)

St. Vincent's Orphan Asylum, (Tacony.) PHILADELPHIA.... School Corporation, (Union street.) Seminary for Young Ladies, (Wash. st.) Seamen's Friend Society. Sisters of Mercy Academy. Sisters of St. Joseph, (Wissahicon township.) Sisters of the Holy Cross. Society for Charity School, (Catharine street.) Soldier's Home. Southern Dispensary. Southern Med. Society of Philadelphia. State Penitentiary for Eastern district of Pennsylvania. Spanish School. Spring Garden Institute. Sunday School Home, (Bustleton.) Southwark Library Company. Teachers' Institute, (Library.) Theological Seminary Reformed Presbyterian Church. Theological Seminary St. Charles of Borromeo. Tract Association of Friends. Union Temporary Home, (16th and Poplar.) United States Mint. United States Navy Yard. University of Pennsylvania. Philomathean Society. Zelosophic Society. Union League, (Library.) Union School and Children's Home. Union Benevolent Association. United States Naval Asylum.

Veterinary College.

Wagner Free Institute of Science. Walnut st. Female Seminary. Washington Institute, (academy.)

)

PHILADELPHIA..... Western Association of Ladies for Relief of Poor.

> Western Provident Society and Children's Home.

Widow's Asylum, (Cherry street.)

Will's Hospital for Lame and Blind. Wistar Medical College.

Women's Medical College. Women's Hospital, (N. Coll. avenue.)

Women's Christian Association.

Women's Union Mission Society. Wright's Beneficial Institute.

Young Men's Home.

Young Men's Christian Association. Young Men's Institute.

_Alleghany County Agricultural Soci-PITTSBURGH ....

ety. Alleghany County Inebriate Asylum.

Alleghany Ladies' Relief Society. Boarding Home for Working Women.

Church Home, (Episcopal.)

Day School for Deaf and Dumb. Duff's Commercial College.

German Library.

High School. Hospital for Insane, (Dixmont.)

House of Refuge.

Home for Aged Protestant Women.

Home for Destitute Women.

House of Industry.

Homeopathic Hospital.

Home for the Friendless.

Iron City Commercial College.

Medical Society of Alleghany County. Mercy Hospital.

Marine Hospital.

Pitts. and Allegbany Orphan Asylum. Pittsburgh Female College.

Parish Guild Episcopal Church.

Pittsburgh Infirmary.

PITTSBURGH......Roman Catholic Orphan Asylum. School of Design. St. Mary's Academy. St. Michael's Theological Seminary. St. Patrick's Academy. Theological Seminary Associate Presbyterian. United Presbyterian Theolg. Seminary. Western Pennsylvania Female College, (Presbyterian.) Western Theological Seminary, (Pres.) Western Penitentiary. Western Penn. Military Academy. Western Pennsylvania Hospital. Western University of Pennsylvania. Widow's Home Association. Women's Christian Association. Young Catholic Friends' Society. Young Men's Christian Association. Young Men's Mercantile Library Association. Young Men's Home Bethel. PINE GROVE ..... Pine Grove Academy. PITTSTON......Academy of Immaculate Heart. PLEASANT UNITY ____Sewickley Seminary. Point Pleasant Academy. Pottstown Academy. Pottsville____Pottsville Literary Society. Law Library. St. Joseph's Academy. Scientific Association. Young Men's Christian Association. PROMPTON ..... Prompton Academy. Pughtown____Oakdale Seminary. Pulaski Graded School. QUAKERTOWN ..... Buck's County Normal School. PHILLIPSBURG.....Thiel College. Richland Library.

RAINSBURG.....Alleghany Seminary.

READING.....Academy of the Immaculate Heart.

READING	_Berk's County Agricultural and Horti-
	cultural Society.
	Classical Academy.
	City Normal School.
	High School.
	Reading Institute.
	Reading Library.
	Society of Natural Science.
	Young Men's Christian Association.
Renovo	Reading Room and Library Associa-
	tion.
	Young Men's Christian Association.
RIDGWAY	Library Association.
ROCHESTER	
	Roxborough Lyceum.
	Saegertown Academy.
Salena	
SCRANTON	High School.
	Scranton Graded School.
	Young Men's Christian Association.
SELIN'S GROVE	_Missionary Institute, (Lutheran.)
	Susquehanna Female College.
SEWICKLEY	Academy.
Shamokin	Shamokin Collegiate Institute.
SHADE GAP	Milnwood Academy.
	Shade Gap Seminary.
Shirleysburg	Female Seminary.
St. Joseph's	_St. Joseph's College.
Shippensburg	_Young Men's Christian Association.
Shrewsbury	
	Young Men's Christian Association.
SLIPPERY ROCK	Young Men's Christian Association.
SMETHPORT	
	Lehigh University.
	Stouchburg Academy.
	_Mercer County Agricultural Society.
	_Stroudsburg Library.
	Warren County Farmers' Club.
Sunbury	_Pennsylvania Academy.
	Sunbury Academy.
	Young Men's Christian Association.

SUSQUEHANNA DEPOT_Academy.	
	Mechanics' Library Association.
SWARTHMORE	Swarthmore College.
TABENTUM	
Тамариа	Young Men's Christian Association.
	Young Men's Christian Association.
TIDIOUTE	Young Men's Christian Association.
TITUSVILLE	High School.
	Young Men's Christian Association.
Torresdale	Lower Dublin Academy.
	Susquehanna Collegiate Institute.
	Voung Man's Christian Association
TROY	Troy Academy.
TURBUTVILLE	Northumb. Co. Agricultural Society.
Tuscarora	
	Tuscarora Academy.
TYRONE	Young Men's Christian Association.
	Fayette County Agricultural Society.
	Madison College.
Unionville	Unionville High School.
	Unionville Institute.
UNITY	St. Vincent College.
	-Valley Forge Milit. Academy.
	Crozer Theological Seminary, (Bap.)
UTICA	
	_Venango Academy.
	_Village Green Seminary.
VILLA NOVA	_Villa Nova College.
	Commercial Department.
WARREN	_Warren Academy.
	Union Graded School.
	Young Men's Christian Association.
Washington	
	Female Seminary.
	Washington and Jefferson College.
	Washington Literary Society.
	Washington County Agric. Society.
	Young Men's Christian Association.
WATERFORD	
WATTSBURG	_Young Men's Christian Association.
	_Madison Academy.
	<u> </u>

WAYNESBURG ...... Waynesburg College.

Commercial Department.

Wellsborough ..... Graded School.

Tioga County Agricultural Society. Wellsborough Academy.

WEST BRADFORD....Boarding School.
WEST CHESTER......Chester County Agricultural Society.

Chester County Athenseum.
Chester County Cabinet of Natural

Chester County Cabinet of Natural Science.

Chester County Horticultural Society.

Columbia Academy.

National Library and Reading Room.

West Chester State Normal School.
Wyers' Boarding School.

Young Men's Christian Association.
WESTFIELD......Young Men's Christian Association.

Farmers and Gardeners' Association.

WEST HAVERFORD...Haverford College.

WEST PHILADELPHIA. Divinity. School of Protestant Episco-

WEST GROVE.....East. Penn's. Experimental Farm.

pal Church.

West Pittston ..... Academy.

Protestant Episcopal Mission House.

Library Society.

Wyoming Historical and Geological So-

ciety.
WILKINSBURG _____Wilkinsburg Academy.

Young Men's Christian Association.

WILLIAMSBURG.....Williamsburg Academy.
WILLIAMSPORT.....Dickinson Seminary.

High School.

Lycoming Co. Agricultural Society.

Young Men's Christian Association.

WIRTEMBURG......Young Men's Christian Association.
WOODVALE.....Laurel Hill Academy.

WYOMING....Luzerne Institute.

Luzerne County Agricultural Society.

Wyoming Horticultural Society.

#### PENNSYLVANIA.

York County Agricultural Society.

Wyoming Seminary.

Wyoming Institute.

York County Academy for Boys.

York County Academy for Ladies.

Young Men's Christian Association.

YORK SPRINGS..... Female Seminary.
ZELIENOPLE...... Orphans' Farm School.

## RHODE ISLAND.

BARRINGTON	
	_Young Men's Christian Association.
Centredale	_Young Men's Christian Association.
CHEPACHET	_Manton Library.
	_Washington Village Library.
CUMBERLAND HILL_	Carrington Library.
East Greenwich	Providence Conference Seminary.
	Free Public Library.
East Providence	Agricultural Society.
Exeter	_Fisherville Library.
FOSTER	_Manton Library.
JAMESTOWN	
	_District No. 8 Library.
LITTLE COMPTON	
LONSDALE	
	_Aquidneck Agricultural Society.
	Berkeley Institute.
	Female Seminary.
	High School.
	Mechanics' Library.
	Newport Historical Society.
	People's Free Library.
	Redwood Library.
	Richardson's Circulating Library.
	St. Mary's Academy.
	Union Library Association.
Newshoreham	•
NORTH SCITUATE	——————————————————————————————————————
	Lapham Institute.
PAWTUCKET	District No. 2 Library.
	Library.
	Young Men's Christian Association.
Peacedale	
	Narragansett Library Association.
	Rodman's District Library.
PHŒNIX	Phœnix Village Library.
	S

PORTSMOUTH......North End Library.
South End Library.

PROVIDENCE.....Brown University.

Philermenian Society.
United Brothers' Society.

Butler Hospital for the Insane.

City Teachers' Library.

Commissioner Public Schools.

Free Lib'ry of Union for Church Work.

Franklin Lyceum.

Franklin Society.

Friends' Boarding School.

High School.

High School Library.

Mechanics' Library.

Numismatic Association.

Perrin's Circulating Library.

Prison and Penitentiary.

Providence Athenaum.

Providence Bar Library.

Tiovidence Dat Dibiai

Reform School.

Rhode Island Art Association.

Rhode Island Historical Society.

Rhode Island Horticultural Society.

Rhode Island Hospital.

Rhode Island Society for Encourage-

ment of Domestic Industry.

St. Patrick's Academy.

Scholfield's Commercial College.

State Agricultural Society.

State Library.

State Normal School.

Warner's B. & S. Business College.

Winsor's Circulating Library.

Young Ladies' High School.

Young Ladies' Seminary.

Young Men's Christian Association.

RIVERPOINT ..... Circulating Library.

Smithfield.....Aborn Library.

STATERSVILLE____Statersville Library.

# RHODE ISLAND.

TIVERTON	Union Society.
WARREY.	Free Public Library.
WARNICK	Old Warwick Library.
WESTERLY	Pancatuck Library.
	Young Men's Christian Association.
WATEROOD	Washington Academy.
<b>W</b>	Warrie Institute Library

# SOUTH CAROLINA.

ABBEVILLE	Young Men's Christian Association.
Anderson	Anderson Co. Farmers' Association.
BARNWELL	_Agricultural Society.
CAMDEN	
	Camden School Association.
	Miss Reynold's School.
	Orphan Society.
CEDAR SPRINGS	Institution for Deaf, Dumb, and Blind
	Apprentices' Library.
	Agricultural and Horticultural Society.
	Avery Institute.
	Charleston City Library.
	Charleston Female Seminary.
	Charleston Library Society.
	Charleston Orphan Asylum.
	College of Charleston.
	Eliot Society of Natural History.
	Mechanics' Society.
	Medical College State of South Carolina.
	Medical Society of South Carolina.
	Museum of Natural History.
	Normal School.
	Observatory.
	South Carolina Historical Society.
	State Orphan Asylum.
	Southern Baptist Publication Society.
	Young Men's Christian Association.
CHERAW	_Cheraw Academy.
•	Cheraw Lyceum.
COLUMBIA	Female Academy Immaculate Conception.
	Legislative Library.
	Library of the Court of Appeals.
	Lutheran Theological Seminary.
	St. Mary's College
	School for Education of Colored Preach
	ers.

#### TENNESSEE.

ATHENS	East Tennessee Wesleyan University.
Bristol	
	Brownsville College.
	Literary Association.
CHATTANOOGA	
	Masonio Female Institute.
CLARKSVILLE	Female Academy.
	Stowart College.
	Stewart Society.
	Washington Irving Society.
	Young Men's Christian Association.
CLEVELAND	Bradley County Agricultural Society.
	Female Masonic Institute.
COLUMBIA	Atheneum.
	Cumberland Female College
	Female Institute.
	Jackson College.
	Maury County Agricultural and Me- chanical Society.
	Maury County Horticultural Society.
DENMARK	Female College.
D Min Million	Young Men's Christian Association.
Enon College	
	Duck River Male Academy.
FALL BRANCH	
	Franklin College.
	Apollonian Society.
	Euphronian Society.
	Male Academy.
	St. Paul's Parish School.
	Tennessee Female College.
GALLATIN	Howard Academy.
	Shelby Male High School.
	Eromathean Society.
GREENEVILLE	Greeneville and Tusculum College.
	Young Men's Christian Association.
IRVING COLLEGE	
	Academy of Immaculate Conception_

Jackson	_West Tennessee University.
	Young Men's Christian Association.
JONESBORO	
	Holston Baptist Female Institute.
	Jonesboro College.
KNOXVILLE	Deaf and Dumb Institute.
	East Tennessee University.
	Chi Delta Society.
	Medical Department.
	Philomathesian Society.
	Young Men's Christian Association.
La Grange	_La Grange College.
LEBANON	_Cumberland University.
	Commercial Department.
	Law Department.
	Theological Department.
	Morton's High School.
	_Judson Female Institute.
LEXINGTON	
Lockhart	
LOOKOUT MOUNTAIN	Lookout Mountain Educational Insti-
	tute.
	_Collegiate Institute.
MARYVILLE	Southwest Theological Seminary and
	Maryville College.
	Beth Hacma Society.
	Beth Hacma ve Berith Society.
MADISONVILLE	_Hiawassee College.
	Erolethian Society.
	Eromathesian Society.
	_Manchester College.
	_Manual Labor School.
MEMPHIS	_Chamber of Commerce.
	Medical College.
	Memphis University.
	Odd Fellows' Library.
	St. Agnes Academy.
	State Female College.
McLemoresville	
McMinnville	_Central Female Institute.
	Cumberland Female College.

McMinnville _____Warren Co. Agric. and Mech. Associa'n. Mossy Creek ..... Baptist College. MURFREESBORO ..... Central Agric. and Mech. Association. Manual Labor University. Soule Female College. Union University. NASHVILLE.... _Catholic Classical School. Central Tennessee College Dr. Cross' Select School. Female Institute. Fisk University and Normal School. Female Academy. High School. Hospital for the Insane. Institution for the Blind. Knox Female School. Law School. Mechanics' Institute. Nashville Business College. State Agricultural Society. State Horticultural Society. State Hospital. State Library. Tennessee Agric. and Mech. Associa'n. Tennessee Historical Society. Theological Dept. Central University. University of Nashville. College of Arts. Erosophian Society. Law Department. Medical Department. Military Institute. Scientific Department. Ward's Seminary. Washington Institute. Young Men's Christian Association.

NORRIS CREEK.....Oakhill Institute.
PULASKI......Giles College.
PRINCETON......Princeton College.
ROGERSVILLE......Caldwell College.

#### TENNESSEE.

Spring Creek	_Madison College.
	Male Institute.
Springfield	Agricultural and Mechanical Associa'n.
	Liberty Academy.
•	Springfield Female Academy.
STOCKTON	Union Agricultural and Library Soc'ty.
	Bedford Male and Female Seminary.
	Dixon Academy.
	Methodist University.
Somerville	Young Ladies' Model School.
	Agricultural and Mechanical Associa'n.
	Andrew College.
	Bascom Rhetorical Society.
UNIVERSITY PLACE.	Sewanee Divinity School.
	University of the South.
WASHINGTON COLL.	_Washington Female College.
WINCHESTER	•
	Central College.
	Mary Sharp College.
	Winchester Female Academy.
	<del>_</del>

#### TEXAS.

AUSTIN	
	Literary and Library Association.
	State Library.
	Supreme Court Library.
	University of Texas.
	Young Ladies' School.
	Texas Military Institution.
	Male and Female Academy.
BONHAM	
	Harley's High School.
	Live Oak Female Seminary.
	State Geological Survey.
Brownsville	Academy of the Incarnate Word.
	St. Joseph's College.
	_Austin County Agricultural Society.
CHAPPELL HILL	_Chappell Hill College.
	Soule University.
CLARKSVILLE	_McKenzie's Institute.
Columbus	_Colorado College.
CONTENT:	Agricultural Society.
DANGERFIELD	_Margaret Houston Female College.
FORT WORTH	
GALVESTON	_College of the Immaculate Conception.
	Female Seminary.
	Galveston Medical College.
	Galveston Medical Society.
	Galveston Reading Club.
	University of St. Mary.
GILMER	_Gilmer Female College.
GOLIAD	_Aranama College.
	Paine Institute.
Henderson	_Fowler's Institute.
	Henderson College.
Houston	_Harris County Industrial Association.
	Medical Society of Texas.
	Houston Lyceum.
	State Agricultural and Mechanical Association.

Huntsville	_Andrew Female College.
	Austin College.
	Clay Union Society.
	Philomathean Society.
Independence	_Baylor University.
	Eusophian Society.
	Law Department.
	Philomathesian Society.
	Theological Department.
	Young Men's Christian Association.
	Female High School.
INDUSTRY	_Agricultural Society of New Elm.
Larissa	
	Marshall University.
MILAM	_Southeast Texas Agricultural Society.
MONTGOMERY	Agricultural and Industrial Society.
NACOGDOCHES	
	_New Braunfels Academy.
PALESTINE	Franklin College.
Paris	_Lamar Female Seminary.
ROCKPORT	_Young Men's Christian Association.
ROUND TOP	_Agricultural Society.
RUTERSVILLE	_Rutersville Female College.
	Texas Christian College.
	Texas Monumental and Military Insti-
	tute.
San Antonio	_St. Mary's College.
	Ursuline Convent Academy.
	East Texas University.
	Guadalupe High School.
STARRVILLE	
TYLER	
	Tyler University.
WACO	
	Waco University.
	Waverly Institute.
Woodville	Woodville College.

# UTAH.

AMERICAN FORK	Agricultural Society.
	Gardeners' Club and Mechanics' Insti- tute.
	Graded School.
BEAVER CITY	Farmers' Club.
BRIGHAM CITY	
	Agricultural and Manufacturing Society.
CEDAR CITY	Agricultural and Manufacturing Soci-
VIII VIII III	ety.
Ephraim	San Pete County Agricultural and Hor-
	ticultural Society.
FAIRVIEW	_Agricultural and Horticultural Society.
FARMINGTON	
	Davis County Agricultural and Manu-
	facturing Society.
FOUNTAIN GREEN	Agricultural and Horticultural Society.
GARDNERSVILLE	_Gardeners' Club.
GUNNISON	_Farmers, Gardeners and Foresters' Club.
HARRISBURG	_Harrisburg Horticultural Society.
HEBER CITY	Wasatch Manufacturing and Agricul-
	tural Society.
LOGAN	
MEADOW CREEK	
MINERSVILLE	_Agricultural Society.
MORONI	Farmers and Gardeners' Club.
Mount Pleasant	_San Peke Agricultural Society.
	_San Pete Gardeners' Club.
Nерні	Agricultural and Manufacturing Society.
OGDEN	_Academy.
	Weber County Agricultural and Home
	Manufacturing Society.
	Wasatch Base Gardeners' Club.
PAROWAN	-Gardeners' Club.
PAYSON	Agricultural and Gardeners' Club.
Provo	Timpannagos Branch of State University.
	J ·

ProvoGardeners and Mechanics' Institute.
Utah County Agricultural and Home
Manufacturing Society.
ROCKVILLEFarmers' Club.
Kane County Horticultural Society.
SALT LAKE CITYDeseret Agricultural and Manufacturing Society.
Domestic Gardeners' Club.
Eastern Gardeners' Club.
Methodist Episcopal School.
Morgan's Commercial College.
Salt Lake Museum.
St. George Academy.
St. Mark's Grammar School.
Territorial Library.
Twentieth Ward Academy.
University of Deseret.
Medical School.
Normal Department.
SANTAQUINGardeners' and Pomological Club.
SMITHFIELDFarmers' Club.
SPANISH FORKGardeners' Club.
SpringtownGardeners' Club.
St. George Southern Utah Agricultural and Man- ufacturing Society.
Horticultural and Pomolog. Association.
ToquesvilleGardeners' Association.
VIRGIN CITYKane County Horticultural Society.
Washington Gardeners' Club and Library Associa-
tion.

# VERMONT.

ALBURGH SPRINGS	Academy
BAKERSFIELD	Academy.
BARRE	_Barre Academy.
	Green Mountain Control Institute
BARNET	Vermont Historical and Antiq. Society
BARTON	Barton Academy and Graded School.
Bellows Falls	High School.
	Parish Library.
•	St. Agnes Hall.
Bennington	Bennington Co. Agricultural Society.
	Free Library.
	Graded School.
	Mt. Anthony Seminary.
	Young Men's Christian Association.
	Young Men's Christian Association.
Bradford	_Bradford Academy.
	Young Men's Christian Association.
Brandon	_Farmers' Club.
	Graded School.
Brattleboro	_High School.
	Library Association.
	Vermont Asylum for Insane.
Bridport	Young Men's Christian Association.
Bristol	Fletcher Academy.
	Bristol Literary and Scientific Inst.
	Young Men's Christian Association.
	_Orleans County Grammar School.
BURLINGTON	_State Agricultural Society.
	High School.
	University of Vermont and State Ag
	ricultural College.
	Department of Natural History
	Medical Department.
	Phi Sigma Nu Society.
	Society for Religious Inquiry.
	University Institute Society.
	Vermont Episcopal Institute.
	Young Men's Association.

#### VERMONT.

_	T
Burlington	Young Men's Christian Association.
<b>a</b>	Young Women's Christian Association. Library Association.
CASTLETON	Castleton Seminary.
_	State Normal School.
	Fletcher Town Library.
	_Charleston Academy.
CHESTER	
_	Young Men's Christian Association.
	_Corinth Academic Institute.
	_Lane Library Association.
COVENTRY	
CRAFTSBURY	
	Phillips Academy and Graded School.
DERBY	
	Derby Library.
•	Orleans Co. Society of Natural Sciences.
	Young Men's Christian Association.
	_Academy of Our Lady of Vt.
	Lamoille County Agricultural Society.
	_Essex Classical Institute.
	New Hampton Lit'ry and Theol. Inst.
	Young Men's Christian Association.
	-Windham County Agricultural Society.
	Library Association.
GEORGIA	•
	Orleans Liberal Institute.
GROTON	
	Essex County Grammar School.
HARDWICK	_Academy.
HINESBURGH	_Hinesburgh Academy.
HOLLAND	_Academy.
	Lamoille Central Academy.
IRASBURGH	Orleans County Agricultural Society.
Johnson	_State Normal School.
	Young Men's Christian Association.
	_Jonesville Academy.
LINCOLN	Young Men's Christian Association.
Londonderry	_Academy.
	West River Academy.
LOWER WATERFORD	_Farmers' Club.

#### VERMONT.

LUDIOW	_Black River Acad. and Grad. School.
	Young Men's Christian Association.
Lyndon Center	Academy.
	Caledonia County Agricultural Society
	Caledonia County Wool-growers and
	Sheep-breeders' Association.
	Lyndon Lit. and Bib. Institute.
Manchester	Burr and Burton Seminary.
	Young Men's Christian Association.
Marshfield	Agricultural Club.
McIndoe's Falls	McIndoe's Falls Seminary.
MIDDLEBURY	Addison County Grammar School and
	Middlebury High School.
	Middlebury College.
	Philadelphian Society.
	Philomathesian.
	Young Men's Christian Association.
Middletown	Young Men's Christian Association.
Montpelier	State Cabinet Natural History.
	State Library.
	Vermont Conference Seminary and
	Methodist Female College.
	Washington County Grammar School
	and Montpelier Union School.
	Young Men's Christian Association.
Morgan	Morgan Academy.
	People's Academy and Graded School.
	Young Men's Christian Association.
NEWBURY	Newbury Seminary.
	Beeman Academy.
North Bunnington	
N O	Young Men's Christian Association.
	Craftsbury Academy. Northfield Graded School.
NORTHFIELD	Norwich University.
Noney Thou	Missisquoi Valley Academy.
	Classical and English Boarding School.
ORWELL	
VDW BUU =======	Young Men's Christian Association.
PAWLET	Mettowee Academy.
	Caledonia County Grammar School.
- EGVHAR	

	Young Men's Christian Association.
Post Mills	
Poultney	Ripley Female College.
	Vermont Home School for Boys.
•	Young Mcn's Christian Association.
Pownal	Oak Grove Academy.
	Rural Home School for Boys.
RANDOLPH	_Farmers' Club.
•	State Normal School.
RICHMOND	Richmond High School.
ROYALTON	_Academy.
	Rutland Graded High School.
	Young Men's Christian Association.
SALISBURY	Young Men's Christian Association. Young Men's Christian Association.
	Agricultural Library.
Shoreham	
	Young Men's Christian Association.
South Hero	_Island Academy.
	Young Men's Christian Association.
	Green Mountain Perkins Academy.
Springfield	_Farmers' Club.
	Graded High School.
	Thoroughbred Stock Association.
St. Albans	_Academy of Notre Dame.
	Aldis Hall Boarding School.
	Graded School.
St. Johnsbury	_Fairbanks Library.
	Franklin Library.
	Graded School.
	St. Johnsbury Academy.
	St. Johnsbury Athenseum.
STOWE	Young Men's Christian Association.
STRAFFORD	
SWANTON	
THETFORD	_Thetford Academy.
	_Leland and Gray Seminary.
	Young Men's Christian Association.
Underhill	_Academy.
Underhill Center	Green Mountain Academy.
	Young Men's Christian Association
15	49

VERGENNESChamplain Valley Agricultural Society.
Vergennes Graded School.
Young Men's Christian Association.
WAITSFIELDWaitsfield High School.
WATERBURY CENTER. Adelphic Literary Society.
Green Mountain Seminary.
WATERBURYGraded School.
Vermont Reform School.
WEST BRATTLEBOROYoung Men's Christian Association.
Glenwood Ladies' Seminary.
WESTFIELDWestfield Grammar School.
WEST RANDOLPH West Randolph Academy.
WESTMINSTER Harvest Club.
WEST RUTLAND Young Men's Christian Association.
WEYBRIDGE Addison County Agricultural Society.
WILLISTON
WILMINGTONAgricultural Society.
High School.
Young Men's Christian Association.
WINDSORAthenæum.
Windsor High School.
WINOOSKIGraded School.
St. Louis Academy.
Young Men's Christian Association.
WoodstockWindsor County Agricultural Society.
Woodstock High School.
9

#### VIRGINIA.

ABINGDON .....Abingdon Academy. Academy of the Visitation. . Jackson Institute. Literary Association. Lyceum. Martha Washington Female College. ACCOTINE ____Agricultural Society. ALEXANDRIA ..... Episcopal High School. Alexandria High School. Alexandria Library. St. John's Academy. St. Mary's Academy. Young Ladies' Institute. Young Men's Christian Association. ASHLAND ......Randolph Macon College. Franklin Society. Washington Society. Bellevue (Bedford Co.) High School. BERRYVILLE _____Academy Library. Library Association. BLACKSBURG......Preston and Olin Institute. Virginia Agricult. and Mech. College. BOTHTOURT SPRINGS - Hollins Female Institute. Valley Union Seminary. Bristol Female Institute. King College. Mountain View Female Seminary. CHARLOTTESVILLE ... University of Virginia. Agricultural Department. Jefferson Literary Society Law Department. Liberty Council of Friends of Temperance. Medical Department. Scientific Department. Society of Alumni. Washington Literary Society. Young Men's Christian Associa'n.

CHARLOTTESVILLE ... Young Ladies' Institute. Young Men's Christian Association. CHRISTIANSBURG ____ Montgomery Academy. Montgomery Female College. CULPEPER .....Culpeper Military Institute. Piedmont Agricultural Society. DANVILLE ____Lyceum. Roanoke Female College. Emory and Henry College. Business Department. Calliopean Society. Hermesian Society. FAIRFAX ....Literary and Theological Institute. Young Mon's Christian Association. FREDERICKSBURG .... Young Men's Christian Association. HAMPDEN-SIDNEY.... Hampden-Sidney College. Philanthropic Society. Union Society. Union Theological Seminary. Hampton.....Academy. Hampton Nor. and Agricult. Institute. United States Military Asylum. HERNDON .....Farmers' Club. LANGLY ....Langly Literary Club. LEESBURG ____Academy. LEXINGTON _____Agricultural and Mechanical Society. Ann Smith Academy. Franklin Society. Lexington High School. Virginia Military Institute. Cadet's Society. Physical Survey of Virginia. Virginia Dialectic Society. Washington and Lee University. Business School.

> Graham Lee Society. Law Department.

LYNCHBURG......Agricultural and Mechanics' Society.
Classical School.

Washington Literary Society. Young Men's Christian Association.

LYNCHBURGMedical Society of Virginia.			
	Young Men's Christian Association.		
MADISON	Library Association.		
	Young Men's Christian Association.		
New London			
	Polytechnic Institute.		
	Horticultural and Pomological Society.		
	Merchants and Mechanics' Exchange.		
•	St. John's College.		
	St. John's Theological Seminary.		
	St. Mary's Academy.		
	Washington Institute.		
	Webster Institute for Boys.		
	Young Men's Christian Association.		
Northumberland	-Academy Library.		
	_Norwood (Nelson Co.) High School.		
	_Anderson Seminary.		
	Board of Education.		
	Confederate Female College.		
	Classical and Mathematical School.		
	Female Orphan Asylum.		
	High School.		
	High School College.		
	Leavenworth Female College.		
	Library of Petersburg.		
	Petersburg Female College.		
- ,	Petersburg Female Institute.		
	Petersburg Library Association.		
	Southern Female College.		
	St. Andrew's Society.		
	St. Joseph's Catholic School.		
	T. D. Paul Orphan Asylum.		
	Young Men's Christian Association.		
Portsmouth	_College Institute.		
	Library Association.		
	United States Navy Yard.		
	Va. Male and Female College Institute		
	Young Men's Christian Association.		
RICHMOND	_Academy of Medicine.		
	Baptist Female Institute.		
	Colver Theological Institute.		

RICHMOND .... McGuire's School: Medical College of Virginia. Normal School. Richmond College. Commercial Department. Law School. Mu Sigma Rho Society. Philologian Society. Richmond Female Institute. Richmond Library Association. St. Boniface High School. St. Joseph's Academy. St. Mary's Academy. St. Patrick's Academy. Southern Female Institute. State Agricultural Society. State Library. University School. Virginia Historical and Phil. Society. Virginia Hort. and Pomological Soc'y. Young Men's Christian Association. SALEM.....Roanoke College. STAUNTON .....Augusta Female Seminary. Baptist Female Institute. Diocesan Female School. Institution for Deaf, Dumb and Blind. Staunton Female Seminary. Wesleyan Female Institute. Western Lunatic Asylum. THEOLOGICAL SEM., Theological Seminary, (Episcopal.) FAIRFAX Co., Missionary Society. WILLIAMSBURG..... Eastern Lunatic Asylum. William and Mary College. Law School.

Medical College. WINCHESTER____

> Shenandoah Valley Academy. Valley Female Institute.

Young Men's Christian Association.

# WASHINGTON.

OLYMPIA	Public Library.
•	Territorial Library.
	Territorial Agricultural Society.
SEATTLE	Territorial University.
VANCOUVER	Clark County Agricultural Society.
	Vancouver Seminary.
WALLA WALLA	Agricultural, Manuf. and Art Society.
	Walla Walla Agricultural Society.
Whatcom	Agricultural Society.

# WEST VIRGINIA.

BETHANYBethany College.
Adelphian Society.
American Literary Institute.
Neotrophian Society.
Scientific Department.
CHARLESTON
Public School.
St. Mary's Academy.
State Library.
CLARKSBURGCentral Agricultural and Mechanical
Society.
Graded School.
Northwest Virginia Academy.
FLEMINGTON West Virginia College.
Normal Department.
FAIRMONTGraded School.
GRAFTONGraded School.
HARPER'S FERRYStorer College.
Normal Department.
HUTTONSVILLE Agricultural and Pomolog. Society.
LEWISBURG Court of Appeals Library.
MARSHALL COLLEGE_Marshall College.
MARTINSBURGLyceum.
Normal School.

Moorefield.....Graded School.

Morgantown.....Agricultural College.

Female Seminary.

Graded School.

Monongalia Academy.

West Virginia University. Military Department.

Normal Department.

Moundsville _____ State Penitentiary. PARKERSBURG.____Catholic Classical Academy.

High School.

Literary Association.

Parkersburg Fomale Seminary.

Young Men's Christian Association.

PRUNTYTOWN _____Rector College.

ROMNEY .....Institution for Deaf, Dumb, and Blind.

Literary Society.

Potomac Seminary.

WEST LIBERTY ____State Normal School.

WHEELING.....Academy of the Visitation.

Academy for Boys.

Linsley Institute.

Medical Society of West Virginia.

Mount de Chantal Academy.

Northwest Virginia Agricultural Soci-

St. Joseph's Academy.

St. Vincent's College, (theological.)

Wheeling Female College.

Wheeling Institute.

Wheeling Library Association.

# WISCONSIN.

•	A 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Academical and Normal Institute.
ALLEN'S GROVE	Young Men's Christian Association.
Apple River	
_	Southwestern Wisconsin Farmers' Club.
APPLETON	Farmers' Union Agricultural Associa'n.
	Lawrence University.
	Commercial Department.
	Phœnix Society.
	Outagamie Co. Agricultural Society.
	Outagamie Co. Fruit-growers' Associ'n.
	Sauk County Agricultural Society.
BEAVER DAM	
	Wayland University.
	Young Men's Christian Association.
Beloit	Beloit College.
	Archæan Society.
	Missionary Society.
	High School.
	Young Men's Christian Association.
BLACK RIVER FALLS	Jackson County Agricultural Society.
BLACK RIVER FALLS BLOOMINGTON	Jackson County Agricultural Society.
BLOOMINGTON	Jackson County Agricultural Society.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society.
BLOOMINGTON BRISTOL CEDARBURG DELAFIELD	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.)
BLOOMINGTON BRISTOL CEDARBURG DELAFIELD	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society.
BLOOMINGTONBRISTOLCEDARBURGDELAFIELDDARLINGTONDARTFORD	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society.
BLOOMINGTONBRISTOLCEDARBURGDELAFIELDDARLINGTONDARTFORD	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society.
BLOOMINGTON  BRISTOL  CEDARBURG  DELAFIELD  DARLINGTON  DARTFORD  DELAVAN	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society.
BLOOMINGTONBRISTOLCEDARBURGDELAFIELDDABLINGTONDARTFORDDELAVANDODGEVILLE	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary.
BLOOMINGTONBRISTOLCEDARBURGDELAFIELDDARLINGTONDARTFORDDDELAVANDODGEVILLEEAU CLAIREELK HORN	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society. Evansville Seminary.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society. Evansville Seminary. Agricultural and Mechanical Society.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society. Evansville Seminary. Agricultural and Mechanical Society. Fond du Lac Medical Society.
BLOOMINGTON  BRISTOL  CEDARBURG  DELAFIELD  DARLINGTON  DARTFORD  DELAVAN  DODGEVILLE  EAU CLAIRE  ELK HORN  EVANSVILLE  FOND DU LAC	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society. Evansville Seminary. Agricultural and Mechanical Society. Fond du Lac Medical Society. High School. St. Agnes Academy. Young Men's Christian Association.
BLOOMINGTON  BRISTOL  CEDARBURG  DELAFIELD  DARLINGTON  DARTFORD  DELAVAN  DODGEVILLE  EAU CLAIRE  ELK HORN  EVANSVILLE  FOND DU LAC	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society. Evansville Seminary. Agricultural and Mechanical Society. Fond du Lac Medical Society. High School. St. Agnes Academy. Young Men's Christian Association.
BLOOMINGTON	Jackson County Agricultural Society. Tafton Academy. Kenosha County Agricultural Society. Ozaukee County Agricultural Society. Nashotah House, (Academy.) Lafayette County Agricultural Society. Green Lake Co. Agricultural Society. Institution for Deaf and Dumb. Iowa County Agricultural Society. Eau Claire Wesleyan Seminary. Walworth County Agricultural Society. Evansville Seminary. Agricultural and Mechanical Society. Fond du Lac Medical Society. High School. St. Agnes Academy.

GALESVILLE ..... Galesville University. GENOA.....Walworth County Institute. GLENBEULAH.......Horticultural Society. GRAND RAPIDS..... Grand Rapids University. GREEN BAY.....Brown County Agricultural Society. High School. Ursuline Academy. Howard's Grove....Mission House, (Theological School.) Hudson Literary Association. JANESVILLE....Female Seminary. High School. Janesville College. Mechanics' Institute. Rock County Agricultural Society. Rock County Horticultural Society. State Institute for the Blind. Young Men's Christian Association. JEFFERSON ..... Jefferson County Agricultural Society. Jefferson Liberal Institute. KENOSHA.....High School. Horticultural Society. Kemper Hall School. Odd Fellows' Library. KILBOURN CITY____ Kilbourn Institute. KINGSTON......Walsh County Agricultural Society. LA CROSSE____Northwestern University. Symphony College. LANCASTER .....Grant County Agricultural Society. MADISON.....Board of Education. Executive Library. Female Seminary. German Horticultural Society. High School. Horticultural Society of Wisconsin. Insane Asylum. Madison Horticultural Society. Madison Institute. Medical Society of Wisconsin. State Agricultural Society.

> State Library. State Normal School.

Madison .... University of Wisconsin. Agricultural Department. Athenesan Society. Castalian Society. Hesperian Society. Law Department. Medical Department. Military Department. Philomathean Society. Wisconsin Academy of Sciences. Young Men's Association. Young Men's Christian Association. Manitowoc----Young Men's Institute. MARSHALL....Augsburg Theological Seminary. Marshall Academy. Mazo_____Haskell University. MILTON.....Milton Academy. Milton College. Commercial Department. MILWAUKEE.....Anger's Circulating Library. Catholic Seminary. Collegiate Institute. Cosmopolitan Society. Female College. Curious Society. German and English Academy. German and French Circulating Lib'ry. German Society. Milwaukee Academy. Milwaukee Female College. Milwaukee University. St. Gall's Academy. South Side Library. Spencerian Business College Teutonia Society. Wisconsin Agric. and Mech. Associa'n. Yallap's Circulating Library. Young Men's Association. Young Men's Christian Association. MINERAL POINT .... Seminary.

MONROE.....Green Co. Agric. and Mech. Institute.

NASHOTAH LAKES	. Nashotah Theological Seminary.
NEENAH	Scandinavian Library.
NEW HOLSTEIN	German Agricultural Society.
Oconomowoc	_Seminary.
OGDENSBURG	Ogdensburg University.
Ознкозн	High School.
	State Normal School.
	Young Men's Association.
PATCH GROVE	_Patch Grove Academy.
	_Adams County Agricultural Society.
PLATTEVILLE	
	State Normal School.
POINT BLUFF	Brunson Institute.
PORTAGE	
	Young Men's Christian Association.
	Young Men's Institute.
PRAIRIE DU CHIEN.	St. John's College.
PRESCOTT	Pierce County Agricultural Cociety.
	Board of Education.
	Columbia Co. Agricultural Society.
	Public School Library.
	Racine College.
;	Philomathean Society.
•	Racine Library Association.
•	St. Catherine's Academy.
	Young Men's Christian Association.
RICHLAND CENTRE_	Richland County Agricultural Society
	_Brockway College.
	Farmers' Club.
	Ripon College.
	Normal Department.
	Young Men's Christian Association.
RIVER FALLS	
	Farmers' Club.
Rochester	_Rochester Institute.
St. Francis	
	The Salesianum, (R. C. Theol. Sem.)
St. Croix Falls	Polk County Agricultural Society.
	_St. Mary's College.
SHABON	_Normal and Scientific Institute.
SHEBOYGAN	
	♥.

SHEBOYGAN	Sheboygan Co. Agricultural Society.
	Sinsinawa Mound College.
	St. Clara's Academy.
Sparta	Monroe County Agricultural Society.
	Library Association.
	Lake Superior Agricultural Society.
VIROQUA	Vernon County Agricultural Society.
	-Waterloo Academy.
WATERTOWN	Northwestern University.
	Union School.
	Young Men's Association.
WAUKESHA	_Carroll College.
•	Philomathean Society.
	State Reform School.
	Waukesha County Agricultural Society.
WAUPACCA	Medical Society.
	Waupacca Agricultural Society.
WAUPUN	State Prison.
WAUSHARA	Female Seminary.
WHITEWATER	State Normal School.
	Young Men's Christian Association.
West Salem	La Crosse County Agricultural Society.

# WYOMING.

CHEYENNE Territorial Library.

•

Page.	Page.	Page.
Aaronburg, Pa 184	Amity, Iowa 42	Attleboro, Mass 69
Abbeville, S. C 211	Amo, Ind	Attleboro, Pa 185
Aberdeen, Miss 102 Abingdon, Ill 23	Answerdam, N. Y 124 Ansmosa, Iowa 42	Auburn, Ala 1 Auburn, Ind 35
Abingdon, Va 927	Anamosa, Iowa	Auburn, Ind 35 Auburn, Me 60
Abington, Wass 69	Anderson, Ind 35	Auburn, N. Y 124
Abington Centre, Pa 184	Anderson, S. C 211	Auburndale, Mass 69
Absecom, N. J 116	Andersonburg, Pa 184	Augusta Ga 20
Academia, Pa 184	Andes, N. Y 124	Augusta, Ky 49 Augusta, Me 60
Accotink, Va 227 Acra, N. Y 122	Andover, Me 60 Andover, Mass 69	Augusta, Me 60
Acton, Me 60	Andover, Mass 69 Andrew, Iowa 42	Augusta, Ohio 167 Augusta, N. Y 124
Ada, Ohio 167	Angelica, N. Y 124	lAnrora III 92
Adams, N. Y 122	Anna. III 23	Angone Ind 95
Adel, Iowa 42	Ann Arbor, Mich 92	Aurora, N. Y 124
Addison, N. Y 23 Addison, N. Y 122	Annandaie, N. Y 124	Austin, Minn 99
Adrian, Mich 92	Annapolis, Ind 85 Annapolis, Md 66	Austin, Tex 218
Adrian, Mich 92 Afton, Iowa 42	Annapolis, Md 66 Annville, Pa 185	Austinburg, Ohio 167
Afton, Minn 99	Anoka, Minn 99	Bainbridge, N. Y 124
Afton, N. Y	Anoka, Minn 99 Anson, Me 60	Bainbridge, N. Y 124 Baker City, Oregon 183 Baker-field, Vt 222
Airy View, Pa 184	Ansonia, Ct 7	Bakersfield, Vt 222
Akron, Ohio 167	Antrim, Ohio 167	Baldwin City, Kan 47
Albany Ga	Anglochicole Wie	Baldwinsville, N. Y 124 Balize, La 53
Albany, Ga	Antwerp, N. Y	Ballardville, Mass 69
Albany, N. Y 122, 123	Appleton, Wis 233	Balston Spa, N. Y 124
Albert Lea, Minn 99	Arago, Neo 110	Baltimore, Md 66, 67
Albert Lea, Minn 99	ATCROS. N. Y 124	Bangor, Me 60
Albia, Iowa 42	Arcadia, La 53	Bantam, Ohio 167
Albion, Ill 23 Albion, Mich 92	Arcadia, Mich 93	Baraboo, Wis 233 Bardstown, Ky 49
Albion, N. Y 123	Arcadia, Mo 104 Argyle, N. Y 124	Bardstown, Ky
Albion, Wis 233	ARTZONA 9	Barnesville, Ga 20
Albuquerque, N. Mex 121	Arkadelphia, Ark 8	Barnesville, Ohio 167
Alburgh Springs, Vt 222	ABKANSAS 3	Barnet, Vt 222
Aledo, Ill	Arlington, Mass 69	Barnstable, Mass 69
Alexander, N. Y 123 Alexandria, La 53	Armorek, N. Y 124 Armstrong, Ind. Ter 41	Barnwell, S. C 211 Barre, Mass 69
Alexandria Pa 194	Ashby, Mass 69	Barre, Vt 222
Alexandria Va 227	Ashfield, Mass 69	Barrington, Ill 23
Alfred, Me 60 Alfred, N. Y 123	Ashford, Ct 7	Barrington, K. 1 200
Alfred, N. Y 123	Ashland, Mass 69	Bartlett, Iowa 42
Algiers, La 53 Algona, Iowa 42	Ashland, Ohio 167	Bartlett, Ohio 167 Barton, Vt 222
Allaman Mich Ou	Ashland, Pa 185 Ashland, Va 227	Restron La
Allegheny City, Pa 184	Ashley, Ill 23	Bastrop, Tex 218
Allegheny City, Pa 184 Allen's Grove, Wis 233	Ashley, Mo 104	Bastrop, La
	Ashtabula, Ohio 167	Batavia, Ohio 167 Batesville, Ark 3
Alliance, Ohio 167 Almond, N. Y 123	Ashton, Mo 104	Batesville, Ark 3
Almont, Mich 92	Asheville, N. C 164 Atchison, Kansas 47	Bath, Me 60 Bath, N. H 111
Almond, Iowa 42	Atco, N. J 116	Bath, N. Y 124, 125
Alpena, Mich 92	Athens, Ga 19	Baton Rouge, La 53
Altoona, Pa 184	Athens, Ill 23	Battle Creek, Mich 93
Alton, Ill	Athens, Me	Battle Ground, Ind 35 Bay City, Mich 93
Alton, Ill	Athens, Ohio	Bay City, Mich 93 Bayou Sara, La 53
American Fork, Utah 220	Athens, Tenn 214	Bav Ridge, N. Y 125
Americus, Ga	Athol, Mass 69	Bay St. Louis, Miss 102
Ames, Iowa 42	Athol, Mass	Bay St. Louis, Miss 102 Beatrice, Neb
Ames, N. Y 124	Atlanta, Ga	Beaver, Pa 185
Amesbury, Mass 69	Atlanta, Ill	Beaver City, Utah 220
Amherst, Mass 69 Amherst, N. H 111	Atlantic City, N. J 116 Attica, Ind 33	Beaver Dam, Wis 233 Bedford, Iowa 42
Amite City, La	Attica, N. Y 124	Bedford, Mass 69

Page.	Page 1	Page,
Bedford, Pa 185	Bloomington, Ind 36	Buffalo, N. Y 127, 128
Bedford, Pa	Bloomington, Ind 36 Bloomington, Wis 233 Bloomsburg, Pa 185 Bluebill, Mo.	Buffalo, N. Y 127, 128 Bunker Hill, Ill 24
Belchertown, Mass 69	Bluehill. Me	Burgattatown Pa 186
Belfast, Me 60	Blufton, Ind 35	Burlingame, Kan 47
Belfast, Me	Boalsburg, Pa 185	Burgettstown, Pa 186 Burlingame, Kan 47 Burlington, Iowa 42
Beliair, Ohio 167	Bolse City, Idaho 22	
Bellefontaine, Ohio 167	Bolivar, Mo	Burlington, N. J
Bellefonte, Ala 1	Bonham, Tex 218 Booneville, Mo 104	Burton, Ohio 168
Belle Prairie, Ill 23	Boonsboro, Ark 3	Rutler Pa
Belleville, Ill 23	Bordentown, N. J 116	Butler, Pa
Bellevile, Ind 35	Boston, Mass 70-77	Byberry, Pa 186 Byfield, Mass 77
Belleville, N. Y	Botetourt Springs, Va. 227	Byneid, Mass 77
Bolleview, La	Bouligny, La 53 Bourbon, Ind 35	Cadis, Ohio 168
Bellevue, Va 227	Bourbonnais Grove, Ill. 24	Cairo, Ill 24
Bellows Falls, Vt 222 Belmont, Mass 69	Bowdon, Ga 20 Bowling Green, Ky 49	Calais, Me
Beloit, Wis 233		Caledonia, Mo 104
Belpre, Ohio 107	Bradford, Mass	CALIFORNIA
Belvidere, Ill	Bradford, Pa 180	California, Pa 186
Belvidere, N. C 164	Brainerd, Pa 185	Callensburg, Pa 186 Calumet, Mich 93
Benicia, Cal		(Cambridge III
Benton, Ill	Brandywine Manor, Pa 185 Branford, Ct	Cambridge, Ind 85 Cambridge, Md 67
Benton, Me 60	Brattleboro, Vt 222	Cambridge, Mass 77, 78 Cambridge, N. Y 128
Benzonia, Mich 93	Drewer's Ranch, Neb 110	Cambridge, N. Y 128
Berea, Ky	Brewersville, Ind 35 Breweter Mass	Cambridge, Ohio 168 Cambridge, Vt
Bergen, N. J 116	Brewster, Mass	Cambridgeport Mass 78
Berkeley, Cal	Bricksburg, N. J 116 Brickton, Ill 24	Camden, Ala 1
Berlin Ohio 7	Bridgeport, Ct 7	Camden Ark 3
Berlin, Vt 222	Bridgeport, Ind 35	Camden, Me
Berlin, Ohio	Bridgeport, Ind 35 Bridgeport, Pa 186 Bridgeton, N. J	Camden, S. C
Berrysburg, Pa 185 Berryville Va 997	Bridgeton, N. J 116 Bridgewater, Mass 77	Cansan, Ohio
Berrysourg. Pa. 185 Berrysourg. Pa. 227 Bethany, Ct. 7 Bethany, Pa 185 Bethany, W. Va. 231 Bethel, Ct. 7 Bethel, Ky. 49 Bethel, Me. 60 Bethlehem, Ct. 7	Bridgort Vt 222	Canaan, Ohio
Bethany, Pa 185	Brigham City, Utah 220	Canai Dover, Unio 108
Bethel Ct 7	Brighton, Mass	Canandaigua, N. Y 129 Candor, Pa 186
Bethel, Ky 49	Brighton, N. Y	Canestota, N. Y 129
Bethel, Me 60	Dringiers, La 63	Canneid, Ohio 168
Bethlehem, Ct	Bristol, Ct 7 Bristol, Pa 186	Cannon Falls, Minn 99
Bethlehem, Ky 49	Bristol, R. I 208	Cannonsburg, Pa 186 Canterbury, N. H 111
Bethlehem, Pa 185	Bristol, Tenn 214	Canterbury, N. H 111 Canton, Ill 24
Beverley, Mass 69 Beverly, N. J 116	Bristol, Va 227	Canton, Ill 24 Canton, Mo 104
Beverly, Ohio 167	Bristol, Vt. 222 Bristol, Va. 227 Bristol, Wis. 233 Brockport, N. Y. 125	Canton, Mo
Biddeford, Me 61 Big Rapids, Mich 93	Brockport, N. Y 125	Canton, Ohio 168
Billerica, Mass 69	Brook, Ind	Cape Gilaideau, Mo Ive
Billerica, Mass	Brookfield, Mass 77	Carbondale, Ill 24
Birmingham, Ct 7 Birmingham, Pa 185	Brookline, Mass 77	Carbondale, Pa 186 Carlinville, Ill 24
Black River Wolls Wis 233	Brooklyn, Ct 7	
Black Rock, N. Y	Brooklyn, lowa 42	Carlisle, Fa
Bladen N.C. 164	Brooklyn, Ind	Carmichael's Pa 186
Blairstown, N. J 116	Brooklyn, Ohio 168	Carondelet, Mo 104
	Brookville, ind 35	Carroliton, Ga 20
Blanchester, Ohio 167 Blandinville, Ill 23	Brookville, Pa 186 Brownington, Vt 222	Carroliton, Ill
Blanford, Mass 69	Brownstown, Ind 35	Carrollton, La 53
Blendon, Ky 49		Carrollton, Md
Blissfield, Mich 93 Bloomfield, Ct	Brownsville, Tenn 214	Carroliton, Miss 102 Carroliton, Mo 164
Bloomfield, Iowa 42	Brownsville, Tex 218	Carrollton, Ohio 168
Bloomfield, Ct	Brownsville, Pa	Carrollton, Ohio
Bloomingdale, Ill 93		Carthagena Ohio 168
Bloomingdale, Ind 35	Bryan, Ohio 168 Bucksport, Me 61	Carthage, Ill 24
Bloomingdale, Ind 35 Bloomington, Ill 23, 24	Bucyrus, Ohio 168	Carthage, Tenn 214

Carver. Minn 99	Page. Chester, N. H 111	Columbus, Miss 102
Cary, N. C 164	Chester, N. H	Columbus, Ohio 172, 173 Columbus, Tex 218
Caseyville, Ill 24 Cassopolis, Mich 93	( hester, Ohio 168	Columbus, Tex 218
Cassville, Ga 20	Chester, Pa	Concord, Mass
Cassville, Ga 20 Cassville, Mo 104	Chester X Roads, Ohio. 168	Concord, Mo 104 Concord, N. H 111
Cassville, Pa 186 Castine, Me 61	Chesterfield, Ill 24 Chesterfield, Mass 79	Concord, N. H 111 Concordville, Pa 187
Castle Creek, N. Y 129	Chesterfield, N. H 111	Conneautville, Pa 187
Castleton, La 53	Chestertown, Md 67	CONNECTICUE 7
Castleton, Vt	Cheviot, Ohio 168 Cheyenne, Wyom. T 237	Connectaville, Pa 187
Catletsburg, Ky 49	(hicago, Ill 24-28)	Connellsville, Pa 187 Connersville, Ind 35 Constantia, N. Y 130
Catlin, Ill 24	Chicopee, Mass	Constantine, Mich 92
Cato, Kan 47 Catonsville, Md 67	Chillicothe, Mo 104	Content, Tex
Catskill, N. Y 129	Chillicothe Ohio 168	Conyngnam, Pa 187
Catonsville, Md.       67         Cat+kill, N. Y       129         Cat Spring, Tex       218         Cavendish, Vt       223	China, Me	Conway, Mars, 79 Coolville, Ohio 172
Cave Spring, Ga 20	Christiansburg, Va 228	Cooperstown, N. Y 130 Cooperstown, Pa 187
Cave Spring, Ga 20 Cazenovia, N. Y 129	Chulahoma, Miss 102	Cooperstown, Pa 187
Cedarburg, Wis	Church Creek, Md 67 Cincinnati, Ohio 168-171	
COURT PRIIS, JOWS 42	Cincinnatus, N. Y 129	Corinth, Vt
Cedar Grove, Ky 49 Cedar Rapids, Iowa 42	Circleville, Ohio 171	Cornwall, Vt 223
Cedar Springs, S. C 211	Claremont, N. H 111	Corry, Pa 187 Cortland, N. Y 130
Cedarsville, Ky 49	Clarence, N. Y 129	
Central City Coi	Clarinda Joya 42	Corvains, Ore 183
Central City, Coi 6 Central College, Ohio 168	Circleville, Ohio	Corvallis, Ore
Centralia, Ill 24	Clark burg, W. Va 231	Coshocton, Ohio 173
Centralia, Kan	Clarkston, Mich 93	Council Grove Kan 47
Central Village, Ct 7 Centredale, R. I 208	Clarksville, Tenn 214	Courtland, Minn 99
Centredale, R. I 208	Clarksville, Tex 218	Courtland, Minn 99 Coventry, R. I 208 Coventry, Vt 223
Centre Sandwich, N. H. 111	Clarksville, Iowa	Covington, Ga 20
Centreville, Fla 18	Clearneid, Pa 187	Covington, Ga
Centreville, Ind 35 Centreville, Iowa 42	Cleveland, Minn 99	
Chambersburg, Pa 187	Cleveland, Ohio 171, 172 Cleveland, Tenn 214 Clifton, N. Y	Coxeackie, N. Y
Champaign, Ill 24 Champlain, N. Y 129	Clifton, N. Y 130	Crawfordsville, Ind 35, 36
Chapel Hill, Mo 129	Clinton, Ct	Cresco, Iowa
Chapel Hill, N. C 164	Clinton, lows 42	Cross Creek, Pa 187
Chappell Hill, Tex 218	Clinton, Kan	Cross Creek, Pa 187 Croton Falls, N. Y 130 Crown Point, Ind 36
Chardon, Ohio	Clinton, Mass 79	Crown Point, N. Y 150
Charles City, Iowa 42	Clinton, Mich 92	Crown Point, N. Y 1:0 Crum Creek, N. Y 130
Charleston, Ill 24 Charleston Me 61	Clinton, Miss 102	Culpeper, Va 228 Cumberland Cent., Me. 61
Charleston, Me	Clinton, N. Y	Cumberland Hill, R. L. 208
Charleston, Vt 223	Cokesbury, S. C 212 Colchester, Ct 7	Cumberland, Md 67 Cuthbert, Ga 20
Charlestown, Ind 35	Cold Spring, Cal 4	Cuthbert, Ga 20 Cynthiana, Ky 49
Charlestown, Mass 78	Coldwater, Mich 92	
Charlotte Hall, Md 67	Colebrook, N. H 111 Colfax, New Mex 121	Dadeville, Ala 1 Dakotah City, Neb 110
Charlotte, Mich	College Corner, Ind 85	l Dale. Ind
Charlottesville, Va., 227, 228	College Hill, Ohio, 172	Damascoville, Ohio 173
Chaska, Minn 99	College Mound. Mo 104 College Point, N. Y 130	Danbury, Ct 7 Dangerfield, Tex 218
Chatfield, Minn 99	College of St. Jas., M.G. 67	Dannemora, N. Y 130
Chatham Corners, N. Y, 129	Collegeville, Pa 187	Danvers, Mass 79
Chatham, Mass	Collinsville, Ct 7 COLORADO 6	Dansville, N. Y
Chattanooga, Tenn 214	Columbia, Ky 49	Danville, Ind 36
Chelmsford, Mass 79 Chelses, Mass 79		Danville, Ky 49 Danville, Mo 104
Chepschet, R. I 208	Columbia, Me	Danville, Pa 187
Cheraw. S. C 211	Columbia, Pa 187	Danville, Pa
Cherry field, Me 61 Cherry Valley, N. Y 129	Columbia, S. C 211, 212 Columbia, Tenn 214	Danville, Va 228   Darby, Pa 187
Cheshire, Ct, 7	Columbiana, Ohio 171	Darien, Ct 7
theshire, mass 19	Columbus, Ga 20 Columbus, Kan 47	Darien Depot, Ct 8
Cheshire, Ohio 168	Columbus, Kan 47	Darlington, S. C 212
	<b>50</b>	

Page.	Page.	Page,
Darlington, Wis 233	Durant, Iowa 43	Eldora, Iowa
Darlington, Wis 233 Dartford, Wis 233	Du: ham, Ct 8	Eldorado Ark 8
Davenport, Iowa 42, 43 Davenport, N. Y 130	Duxbury, Mass 80	Elgin, [1] 27
Davenport, N. Y 130	Dwight, Ill 26	Eliot, Me 61
Davidson College, N. C. 164 Dayton, Ohio 173	Eagletown, Ark	Eigin, III
Dayton, Ohio 173 Dayton, Pa 187	Early Grove, Miss 102	Elizabethtown, N. Y 131
Decatur, Ala	East Abingdon, Mass 80	
Decatur, III 28	East Aurora, N. Y 131	Elkton, Ky 50
Decorah, Iowa	East Bend, N. C., 164 East Bloomfield, N. Y., 131	Elkton, Ky
Decorah, Iowa	East Bloomfield, N. Y., 131 East Boston, Mass 80	Ellicott City, Md 68 Ellington, Ct 8
Deerfield, Mass 79	E. Bridgewater, Mass., 80	Ellington, N. Y 131
Deerneid, vibio 1/3	East Brooklyn, N. Y 131	Ellsworth, Ct 8
Deerfield, Pa 187 Deering, N. H 112	East Cambridge, Ill 26	i Killeworth, Me 62
Deering, N. H 112	East Cambridge, Mass. 80 East China, Me 61	Elmhurst, Ill
Defiance, Ohio 173 De Kalb, Ill 28	East Corinth, Me 61	Limore III 97
Delafield, Wis 233	East Derry, N. H 112	Elmore, Vt 27
Delafield, Wis	East Fairfield, Ohio 174	Elmwood, Ill 27
DELAWARE	E. Feliciana Point La. 54	El Paro, Ill 27
Delaware, Ohio	East Gloucester, Mass. 80 East Greenwich, R.I 208	Elyria, Ohio
Delphi, Ind 36	East Haddam, Ct 8	Emmittsburg, Md 68
Demopolis, Ala 1	Fact Hempton Ct	Emory, Va
	East Hampton, Ma s 80	i Enfield. Mass 80
Denmark, Iowa 43	East Hampton, N. Y 131	Englewood, Ill 27
Denison, Iowa	East Hampton, Ma s 80 East Hampton, N. Y 131 East Hartford, Ct	Enon Miss
Denver, Iowa 43	East Machias, Me 61	Ephraim, Utah 220
Pepauville, N. Y 130	East Maine, N. Y 131	Erie, Pa 188
Deposit, N. Y 131	Lamber Part Carray, Manor Co	Eskridge, Kan 47 Eskex, Ct 8
Derby, Vt 223	East Middlebury, Vt 223 East Morrisania, N. Y. 131	Essex, Ct
De Ruster N V 131	I kingt Now Vork N V 101	Essex Centre, Vt 223 Essex, Mass 80
Des Moines, Iowa 43	Easton, Ct	Easex. N. Y
De Soto, Ill 26	Easton, Md 68	Eudora, Kan
De Suto, La 54	Easton, Ct	Eufaula, Ala 1
De Soto, Mo 104 Detroit, Mich 93, 94	East Paw Paw. Ill 26	Eugene City, Ore 183
Dewart, Pa 187	East Paw Paw, Ill 26 East Pembroke, N. Y., 131	Eureka, Ill
De Witt, Iowa 43	Eastport, Me 61	Eveneville Ind 36
Dexter, Mich 94	Root Dowtland Own 102	Evansville, Wis 233
Dighton, Mass 79 Dirigo, Me 61	East Providence, R. L. 208	Evergreen. La 54 Ewing's Mills, Pa 188
Dirigo, Me	East Providence, R. L. 208 East Randolph, N. Y 131 East Rutland, Vt	Ewington, Ohio 174
DISTRICT OF COLUMBIA 15	East Saginaw, Mich 94	Exeter, Me 62
Dixon, Ill 26	East Somerville, Mass. 80	Exeter, N. H 112
Dixon, Ill	East St. Louis, I'l 26	Exeter, R. I 208
Doe Run, Pa 187	East Suwanee, Fla 18 Fast Vineland, N. J 116	Fairfa - Vt
Dona Ana. New Mex 121	kast Waymouth Mass 20	Fairfax, Vt
Dona Ana, New Mex 121 Donaldsonville, La 54	LAST Whiteland, Pa 188	Fairfield, Ct
Dorchester, Mass 80	Last Wilton, Me 61	Fairfield, Ct
Dover, Del 14 Dover, Ill 26	EMSU WIDGSOF, CL	Fairfield, Iowa 48
Dover, 111	East Winthrop, Me 61	Fairfield, La 54 Fairfield, N. Y 131
Dover, Mo 104	Eaton, Ohio	Fairfield, S. C 212
Dover, N. H 111, 112	Eau Claire, Wis 23	Fairfield, S. C 212 Fairfield, Tenn 214
Dover, N. J 116	Eau Claire, Wis 233	Fair Forest, S. C
Downsizer, Mich 94 Downsizer, Chica 192	Ebensburg, Pa	Fairmont, W. Va 231
DOWNING TOUR ONLY IN INC IZO	Eddytown, N. Y 181	Falmouth, Me
Downington, Pa 187 Doylestown, Pa 188	Edenton, N. C 164	Falmouth, Mass 80
Doylestown, Pa 188		Fall Branch, Tenn 214
Drennon Springs, Ky 49 Dublin, N. H 112	Edgewater, N. Y	Fall River, Mass 80
Dublin, N. H	Edinboro, Pa 188	Falls Village, Ct
Dudley, Mass 80	Edinburg, Mo 104	Fallsington, Pa
Duluth, Minn 99	Edinburg, Mo 104 Edinburgh, Ohio 174	Farmdale, Ky 50
Due west, B. C 212	Lawardsville. III 98. 97	Farmerville, La 54
Dunbar, Pa 188	Ettingham N H 119	Farmingdale, N. Y 131 Farmington, Ct 8
Dundee, N. Y 131 Dunkirk, N. Y 131	Egg Harbor City, N. J. 116	Farmington, Me 62
Dunianavilla, Ind 36	Effingham, Ill	Farmington, Mass 80
Dupont, Ind 36	Enderstudge, Lummin 199	Farmington, Mo 104
DuQuoin, Ill 26	Elderton, Pa 188	Farmington, N. H 112

Page.	? Page.	Page.
Farmington, Utah 220	Fremont, Ohio	Goshen, Ind
Fayette, lowa 43	Fremont, Wis 233	Goshen, N. H
Fayette, Miss 102 Fayette, Mo 104	Freeport, Me 62	Goshen, Uhio 174
	Freeport, Pa 188	Consessor N.V. 100
Fayetteville, Ill 27	Freeport, Pa	Grafton, Mass 81
Fayetteville, Ohio 174 Fayetteville, N. C 164	Fruitland, Mo	Grafton, W. Va 231
Fayetteville, Vt 223	Fulton, Ill	Granby, Mo 105
Felchville, Vt 223	Fulton, Mo	Grand Coteau, La 54
Felton, Del 14 Fenton, Mich 94	Fulton, N. Y 132	Grand Haven, Mich 95 Grand Rapids, Mich 95
Fernandina Fla 19	Full tille, 14. 1 102	Grand Rapids, Wis 234
Fillmore, La 54	Gainesville, Fla 19	Grandview, Iowa 44
Findley, Ohio 174 Fisherville, Ky 50	Galena, III	Grant, Ind
Fisherville, N.H	Galesburg, Ill 27, 28 Galesville, Wis 224	Granville Corners, Mass. 81
Fitchburg Mass 80	Galion, Ohio, 174	Green Lake Mich OS
Flamingsburg Kv 50	Gallatin, Tenn 214	Grass Valley, Cal
Flemington, W. Va 231	Gallipolis, Ohio	Great Barrington, Mass 81
Flint, Mich 95	Gambier, Ohio 174	Great Bend, Pa 189
a lotal attended to the first	Gardiner, Me 62 Gardner, Kan 47	Great Falls, N. H 112
FLORIDA 18	Gardner, Mass 81	Great Falls, N. H
Florida, N. Y 132	Garden Grove. lows 44	Greenbush, N. Y 133
Fond du Lee Wie	Gardnersville, Utah 220 Garlandville, Miss 102	Greencastie, ind 36
Florida, N. Y		Greenfield, Ind 36 Greenfield, Mass 81
FUDIEDELIE, IOWA 43	Garrettsville, Ohio 174 Genesee, N. Y 132	Greensboro, Ala 1
Fontenelle, Neb 110 Fordham, N. Y 132	Geneseo, Ill	Greensborough, Ga 20
	Geneseo, N. Y	Greensburg, Ind 36 Greensburg, La 54
Forest Grove, Ore 183	Geneva, Kan	Greensburg, Pa 189
Forestville, Minn 99	Geneva, N. Y 132, 133	Greenpoint, N. Y 133
Forest Grove, Ore 183 Forestville, Minn 99 Forestville, N. Y 132 Forestville, N. C 164	Geneva Ohio 174 Genoa, Wis 234	Greentop, Mo 105 Greenville, Ala 1
FORSYTH. USL 20	Georgetown, Del 14	Greenville, Ga 20
Fort Covington, N. Y 132 Fort Dodge, Iowa 43	Georgetown, D. C 16 Georgetown, Ill 28	Greenville, Ill 28
Fort Edward, N. Y 132 Fort Hamilton, N. Y 132 Fort Madison, Iowa	Georgetown, Ky 60	Greeneville, Ky
Fort Hamilton, N. Y 132	Georgetown, Mass 81	Greenville, N. Y 133
Fort Plain, N. V. 132	Georgetown, Ohio 174	Greenville, Pa 175
Fort Scott, Kan 47	Coordin Ve 202	Greenville, S. C 212
FULL SHILLI, AFK	Germantown, Pa 188, 189	Greeneville Spigs Vy
Fort Wayne, Ind 36	Germantown, Pa 188, 189 Germantown, Tenn	Greenwich, Ct 8
FORM WORLD, 16X 218	Gettysburg, Pa 189	Greenwich, N. J
Foster, R. I 208 Fountain Green, Utah, 220	Gilbertsville N V 133	Greenwood Ind 37
Foxboro, Mass 80	Gillian, All	Greenwood, Mo 105
Fox Creek, Mo 104	Gilmanton, N. H 112	Grenada, M188 102
Foxcroft, Me 62 Fox Lake, Wis 233	Gilmer, Tex 218 Girard, Pa 189	Gretna, La 54 Griffin, Ga 21
Framingham Moss 21 21	Glade Run, Pa 189	Griggsville, Ill 28
Frankford, Pa	Glade Run, Pa	Grinnell, Iowa 44 Groton, Mass 81
Frankfort, Ky 50	Glasgow, Mo 105	Groton, N. H 112
Franklin, Ind 36	Glastenoury, Ct 81	Groton, N. H
Franklin, Mass	Glase City, Mo 105 Glenbeulah, Wis 234	Guildhall, Vt 223
Franklin, N. H 112	Glendale, Ohio 174	Guilford, Ct 8
Franklin, N. H	Glen Riddle, Pa 189 Glen's Falls, N. Y 133	Gunnison, Utah 220 Guthrie Centre, Iowa. 44
FIRDKIIDIOD, LB 01	Glenwood, Iowa 44	
Franklinville, N. Y 132	Gloucester, Mass 81	Hackensack, N. J 117
Frederick, Md 68 Frederick, Pa 188	Glover, Vt 223 Gloversville, N. Y 133	Hackettstown, N. J 117 Haddam, Ct., 8
Fredericksburg, Va 228	Godfrey, III 28 [	Haddam, Ct
Fredoria, N. Y 132	Golconda, Ill 28 ]	Haddonfield, N. J 117 Hadfield, Mass 81
Freeburg, Ill	Goldsboro, Pa 189	Hadley, Mass 81
Freedom, Me 62	Goliad. Tex 218 i	Hagerstown, Md 68
Freehold, N. J 117 Fremont, Ill 27	Goodhue, Minn 90 Gorham, Me 62	Half Moon, N. Y 133 Hallowell, Me 62
Fremont, Neb 110		Hamburg, Ct
•	•	=

Page. 1	Page. [	Paga.
Hamburg, N. Y 133 Hamden, Ct 8	Herndon, Va	Hyde Park, Mass 82
Humden, Ct 8	Hernando, Miss 102	Hyde Park, Pa 190 Hyde Park, Vt 223
Hamilton, Ga 21	Hese Road, N. Y 134 Hiswatha, Kan 47	Hydropolis, La 54
Hamilton, III 28 Hamilton, N. Y	Hickarille, N. V 134	nyuropons, La
Hamilton, Ohio 175	Hicksville, N. Y 134 Highland, Kan 47 Highland, Miss 102	Iberia, Ohio 175
Hamilton, Ohio	Highland, Miss 102	Iberville, La 54
Hamlin Grove, lows 44	High Hill, Mo 103	Ida, 10Wa 44
Hammondsport, N. Y 133	Hightstown, N. J 117	lchester, Md 68
Hammondsville, Ohio, 175 Hammonton, N. J 117	Hiko, Nevada 111 Hillsboro, Ill 28	ILLINOIS
Hampden Corner, Me., 62	Hillsboro, Mo	Independence, Iowa 44 Independence, Mo 105 Independence, Tex 219
Hampden Sidney, Va 228 Hampton, Iowa 44	Hillsborough, N. H 113	Independence, Mo 105
Hampton, lowa 44	Hillsboro, N. C 164	Independence, Tex 219
Hampton, Va 228	Hillsdale, Mich 95	Indiana, Pa 190
Hampton, N. H	Hingham, Mass 81	Indianapolis, Ind 37
Hancock, Mich 95	Hingham Centre, Mass 81	I INDIAN TERRITORY 41
Hancock, Mich	Hinesborough, Vt	Indianola, Iowa
Ranover, Ind	Hinsdale, Itl 28	Ionia, Mich 96
	Hinadale, Mass 81, 82	Iowa 42
	Hiram, Ohio 175	Iowa
Hanover, Pa 189	Hoboken, N. J 117	Ipswich, Mass 82
Hardinghurg Ky 50	HOCKCOOM, Dennisma 14	Irasburgh,Vt 223
Hardwick, Vt 223	Holden, Mass 82	Irving, Kan 47
Hanover, N. H	Holden, Mo 105	Irving College, Tenn 214
Harlem, N. Y 133	Holland, Mich, 95	Irvington, Ill 28
Warleyanille De 190	Holden, Mo	Tandorgn, V
Harper's Ferry, W. Va. 231	Hollidaysburg, Pa 190	Ithaca Mich 96
Harpersville, N. Y 133	Holliston Mass 82	Ithaca, N. Y 134
Harper's Ferry, W. Va. 231 Harpersville, N. Y	Holly, Mich 95	•
Harrisburg, Utah 220 Harrisouburg, La 54	Holly Grove, Ark 3	Jackson, La 54 Jackson, Mich 96
Harrisonville, Md 68	Holly, Mich	Jackson, Miss 102
Harrison ville. Mo 105		Jackson, Mo 105
Harrisonville, Pa 190 Harrodsburg, Ky 50	Holyoke, Mass	Jackson, Mo 105 Jackson, N. Y 134
Harrodsburg, Ky 50	Homer, Ill 28	Jackson, Ohio
Hartford Kan 47	Homer N V 194	Jackson, 1enn X14, X15
Hartford, Ct	Homestead, lowa 44	Jacksonville, Ill 28, 29 Jacksonville, Ore 183 Jacksonville, Pa 190
Hartland, Ct 9	Honesdale, Pa 190	Jacksonville, Ore 183
Hartland, Mich 95 Hartland, Me 62	I TIOOSICE I BIIS, IV. I 193	Jacksonville, Pa 190
Hartland, Me 62 Hartsville, Ind 37	Hopedaie, Ohio 175 Hopewell, Pa 190	Jattrey, N. H
Hartsville, Pa 190	Hopkinsville, Ky 50	Jamaica Plain, Mass 82
Hartsville, Ind	Hopkinton, lowa 44	Jamesburg, N. J
Harvard, Mass 81 Harveyville, Kan 47	Hopkinton, Mass 82	Jamestown, N. Y 134
Harveyville, Kan 47 Harwich, Mass 81	Hornellsville, N. Y 134 Houlton, Mc 62	Jamestown, Pa 190
Hostings Mich Of	Houlton, Mc	Jamestown R. I 908
Hastings, Minn	Howard, Ind 37	Janesville, Ohio 175
Hatboro, Pa 190	Howard's Grove, Wis 234 Howardsville, Ill 28	Janesville, Wis
Havana III 28	Howell, Mich 95	Jav Bridge Ma 69
Havana, Ala 1	Hoyleton, Ill 28	Jefferson, Ga 21
Haverhill, Mass 81	Hubbardston, Mass 82	Jefferson, Obio
Haverhill, N. H 113	Hudson, Mass 82	Jefferson, Wis 234
Haverstraw, N. Y 133 Hayesville, N. C 164	Hudson, Mich 90	Jefferson City, La 54 Jefferson City, Mo. 105, 106
Hayesville, Ohio 175	Hudson, Mich. 95 Hudson City, N. J. 117 Hudson, N. Y. 134 Hudson, Ohio. 175 Hudson, Wis. 234 Hume, N. Y. 134	Jeffersonville, Ind 37
Hayesville, Ohio 175 Hazleton, Pa 190	Hudson, Ohio 175	Jeffersonville, Ind 37 Jersey City, N. J 117 Jersey Shore, Pa 190 Jerseyville, Ill 29 Jepseyville, Ill 29
Healdsburg, Cal 4	Hudson, Wis 234	Jersey Shore, Pa 190
Heath, Mass 81 Heber City, Utah 220	Huntington Ind 37	Johnson, Vt 223
Hebron, Me 62	Huntington, Ind 37 Huntington, N. Y 134	Johnstown, N. Y 134
Hebron, Me	Huntingdon, Pa 190 Huntsville, Ala 1	Johnstown, N. Y 134 Johnstown, Pa 190
Hempstead, N. Y	Huntsville, Ala 1	Joliet Ill
Henderson, Minn 00	Huntsville, Mo 105 Huntsville, Tex 219	Jonesboro, Tenn 215
Henderson, Tex 218	Hustonville, Ky 50	Jonestown Ps 190
mennepin, III xx	Hustonville, Ky 50 Huttonsville, W. Va 231	Jonesville, Mich 96
Henrietta, N. Y	Hyattsville, Md 68 Hydeburg, Mo 106	Jonesville, Mich 96 Jonesville, Vt 223 Jordan, N. Y
Hephzibah, Ga 21	Hyde Park, Ill 28	
		•

<b>5</b>		
Kalamazoo, Mich 96	Page. Lansing, Mich 96	Page.
Kalamasoo, Mich 96 Kankakee, Ill 29	Lansing, Mich	Lime Rock, Ct 9 Limestone Spr'gs, S. C. 212
KAWRAR 47	Lansingburg, N. Y 134	Limington, Me 63
Kansas City, Mo 106	Lapeer City, Mich 96	Lincoln, Del 14
Kansas City, Mo 106 Kansas City, Neb 110	La Porte, Ind	Lincoln, Del
A each, La 09	Laporte, Pa 191	Lincoln, Me 63
Keeler, Mich 96	Larisea, 10x	Lincoln, Neb 110
Keeseville, N. Y 134	Lasalle, Ill 29 Latrobe, Pa 191	Lincoln, New Mex 121 Lincoln, Vt 223
Keene, N. H	Las Vegas, New Mex 121	Lincolnville, Pa 191
Kemps rerry, ind. 1 41	Las Vegas, New Mex 121 Laurens, S. C 212	Line Lexington, Pa 191
Kenansville, N. C 164 Kenduskeag B'ge, Me. 62	Lawrence, Kan 47	Linglestown, Pa 192
Kenduskeag B'ge, Me, 62 Kennard, Ohio	Lawrence, Mass 82 Lawrenceburg, Ind 38	Lisbon, Me 63 Litchfield, Ct 9
Kennebunk, Me. 63	Lawrenceville, Ill 29	Litchfield Corner, Me. 63
Kennebunkport, Me 63	Lawrenceville, N. J 117 Lawrenceville, N. Y 134	i fittio Illino Ma 62
Kennett Square, Pa 190 Kenosha, Wis 234	Lawrenceville, N. Y 134	Little Compton, R. I 208
Kensington Ct 234	Lawrenceville, Fa 191	Little Britain, N. Y 135
Kensington, Ct	Lawton, Mich 96 Leavenworth C., Kan, 47, 48	Little Compton, R. I 208 Little Britain, N. Y 135 Little Falls, N. Y 136 Little Rock, Ark 3
Kenton, Ohio 176	Leavittsburg, Ohio 176	Little Valley, N. Y 135
KENTUCKY 49	Lebanon, Ct 9	Little Valley, N. Y 135 Littleton, N. H 113
Keokuk, lowa 44	Lebanon, Ill 29	Litiz, Pa 192
Keosauqua, Iowa 44 Kernersville, N. C 164	Leuanon, Kymmin 100	Loami, Ill
	Lebanon, Me	LOCKBERT, 1 end 215
Kickapoo, Ill 29	Lebanon, Mo	Lockland Ohio 176
Kilbourn City, Wis 234	Lebanon, Ohio 176	Lockport, Ill 29
Kickapoo, Ill	Lebanon, Ore 183	Lockhaven, Pa
King of Prussia, Pa 190	Lebanon, Pa 191	LIUUCI VIIIO, I Dan mannin 194
Kingston, N. Y 134	Lebanon, Tenn 215 Le Claire, Iowa 44	Lodi, N. Y 135 Logan, Iowa 44
Kinyston, Pa 190	Le Claire, Iowa 44 Lecompton, Kan 48	
Kingston, Ohio	Ledyard, Ct 9	Logan, Ohio 176 Logan, Utah 220
Kingston Plains, N. H. 113	Lee, Mass 82	Loganeport, Ind 38
Kingsville, Ohio 176 Kirksville, Mo 106	Lee, Me63	Londonderry, Vt 223 Lonedale, R. I 208
Kishacoquillas, Pa 191	Lee Centre, Ill 29	Lonsdale, R. I 208
Kittanning Pa 101	Lee Centre, Ill 29 Leechburg, Pa 191	Lookout Mt., Tenn 215 Loretto, Pa 192
Kittrell springs, N. C 164 Knightstown, Ind 37	Leeds, Me63	Los Angeles, Cal 4
Knightstown, Ind 87	Leeds, Me	Los Angeles, Cal 4 Lott's Creek, Iowa 44 Loudon Centre, N. H 113
Williamine w. I 509	Le Grange, Ky 51	Loudon Centre, N. H 113
Knox Hill, Fla 19 Knoxville, Ill 29	Lehighton, Pa	Louisburg, N. C 164 Louisiana 53
Knoxville, Iowa 44	Lenoir. N. C 164	Louisiana, Mo 106
Knoxville, Iowa	Lenoir, N. C	Louisville, Ill 29
Knoxville, Tenn 215	Leominster, Mass 82	Louisville, Ky 51, 52 Louisville, N. Y 135
Kokomo, lowa 3/	Leon, Iowa 44	Louisville, N. Y 135
Kutztown, Pa 191	Leoni, Mich 96,97	Louisville, Ohio, 176 Loveland, Ohio 176 Lovetts, Ky. 52 Lowell, Mass. 82, 83
Laconia, Me 63	LeRoy, III	Lovetts Kv 52
Laconia, N. H 113	LeSueur, Minn 99	Lowell, Mass 82, 83
La Creole, Ore	Lewis Centre, Ohio 176	Lower Merion, Pa 192 Lower Waterford, Vt 223
La Crosse, Wis 234	Lewisburg, Pa 191	Lower Waterford, Vt 223
Lafayette, Ala	Lewisburg, Tenn	Low Moor, Iowa 44 Lowville, N. Y 135
Lafayette, Ore 183	Lewiston, Me 63	Lucas, Ohio 176
La Fourche, La 54	Lewistown, Pa 191	Ludlow, Vt 224
Lagrange, Ala1	Lewistown, Ill 29	Lumpkin, Ga 21
La Grange, Ga 21	Lexington Ind SSI	Lunenberg, Mass 83 Lutherville, Md 68 Lycoming Creek, Pa 192
La Grange, Ind	Lexington, Ky	Luthervine, Mu 08
Lake City, Minn 99	Lexington, Miss 103	Lynchburg, Va228, 229
Lake Forest III 29	Lexington, Mo 106	Lynchburg, Va228, 229 Lyndon Center, Vt 224
Lakeville, Ct 9	Lexington, Unio 176	Lvnn. Mass 53
Lake Zurich, Ill 29 Lambertville, N. J 117	Lexington, S. C 212	Lyons, Iowa 44, 45 Lyons, N. Y 135
Lamont Mich 96	Lexington, Tenn	'
Lancaster, Ind 38	Liberty, Ind	Macallisterville, Pa 192
Lancaster, Mass 82	Liberty, Iowa 44	Macallisterville, Pa 192 Macedon Centre, N. Y 135 Machias, Me
Lancaster, Ind	Liberty, Me 63	Machias, Me
Lancaster, Uhio 176	Liberty, Mo	Macomb, III 29, 30
Lancaster, Pa 191 Lancaster, Wis 234	Libertvelle III 20	Macon Miss 103
Lanesboro, Mass 82	Lima, N. Y	Macon City, Mo 106
Langly, Va 228	Lima. Ohio 176	Macon City, Mo 106 Madelia, Minn 99
Lansing, lowa 44	Limerick, Me 63	Madison, Ct 9

Dane .	Page 1	Page.
Madison, Fla 19	Page. Mattawan, N. Y 1:35	Milton, Wis 235
Madison, Ga 21	Mattoon, Ill Su	Milwaukee, Wis 235
Madison, Ind 38	Maumee City, Ohio 177	Minden, La 54 Mineral Point, Wis 235
Madison, N. C 164 Madison, N. J 117	Maumee City, Ohio 177 Mayesville, Tenn 215 Maysville, Iowa 45	Mineral Ridge, Iowa 45
Madison, Ohio 176	Maysville, Ky 52	Minersville, Utah 225
Madison, Va 220	Mayview, Mo 106	Minneapolis, Minn 100
Madison, Wis 234, 210	Mnysville, Ky	Minnesota City, Minn. 100
Madison, Ohio		minnesota Lake, minn 100
	McIndoe's Falls, Vt 224 McGrawville, N. Y 135 McKeesport Pa	Minster, Ohio 177 Mississippi 102
Maine, N. Y	McKeesport, Pa 192	Missouri 104
Maiden, Mass 83	McLeansboro, Ill 30 McLemoresville, Tenn 215	Mishawaka, Ind 38
		Mitchell, Iowa
Manchester, Ind 38	McMinnville, Ore 183 McMinnville, Tenn. 215, 216 McVeytown, Pa 192	Mobile, Ala
Manchester, lowa 45	McMinnville, Tenn. 215, 216	Mohawk, N. Y 136
	Meadow Creek, Utah 220	Moline, Ill 30 Monmouth, Ill 30
Manchester, N. H 113	Meadville, Pa	Monmouth, Me 63
Manchester, Tenn 215	Mobandoshum Po	Monmouth, Ore 183
Manchester, N. H	Mechanicsburg, Pa 192 Mechanics' Falls, Me 63	Monongahela City, Pa. 193 Monroe, Ga 21
Munhattan, Kan 48	Mechanicstown, Md 68	Monroe, La 54
Manhattanville, N. Y 135 Manistee, Mich 97	Mechanicatown, Ohio. 177 Mechanicaville, N. Y 135	Monroe, Mich 97 Monroe, Wis 235
Manitowoc, Wis 235	Medford, Mass 83	Monrovia, Ind 38
Mankato, Minn 99, 100 Manlius, N. Y 135	Media, Pa 192, 193 Medina, N. Y 135	MONTANA 109
Mansfield, Ct 9	Medina, Ohio 135	Mont Clair, N. J 117 Monterey, Cal 4
Mansfield, La 54	Medway, Mass 83	Montgomery, Ala Y
Mansfield, La	Memphis. Mo	Montgomery, La 55 Montgomery, N. Y 136
Manti City, Utah 220	Memphis, Tenn 215 Mendota, Ill 30	Montgomery, Ohio 177
Mantua, Pa 192	Mercer. Pa 193	Montgomery, Ohio 177 Montgomery, Tex 219 Monticello, Fla 19
Maquoketa, Iowa 45 Marathon, N. Y 135	Meridan, Minn 100 Meriden, N. H 113	Monticello, Fin 19
Marbiehead, Mass 83	Meridian, Miss 103	Monticello, N. V 136
Marengo, III 30	Merom. Ind 38	Monticello, Itwa
Marietta Ga 21	Merrimac, Mass 83 Metamora, Ind 38	Montpelier, Vt 221
Marietta, Ohio 176	Metropolis, III	Monson, Me 63
Marietta, Pa 192 Marion, Ala 1	Metuchen, N. J 117	Montrose Pa 193
Marion III 30	MICHIGAN 921	Montrose, Pa
Marion, Ind	Michigan City, Ind 38	Moore's Hill, Ind 38
Marion, Ohio	Middlehnry, N. V 135	Morresville, Ind 38 Mora, New Mex 121
Marion, Tenn 215	Middlebury, Ct	Moravia N. V
mariborough, Ct 9	Middlebury, Vt 224	Morgan, Vt 224
Marlboro, Mass 83 Marlow, N. H 113	Middletown N V 136	Morgan, Vt
Monovotto Mich 67	Middletown, Ohio 177	Morgantewn, W. Va 232
Marshall Mich 07	Middletown, Ohio 177 Middletown, Pa 198 Middletown, Vt 224	MUTHING OUD, OUNC 111
Marshall, Ill	Midway, Gil 21	Morris III 90
Marshall College W Ve. 235	Mifflinburg, Pa 193	Morristown, N. J 118 Morrisville, Vt 224
Marshall Col'ge, W.Va., 231 Marshalltown, Iowa 45	Milam, Tex 219 Milan, Ohio 177	Moroni, Utah 220
Marshallville, Ga 21	Millbury, Mass 83	Moscow, Ohio 177
Marshfield, Mo 106	Mill Creek, Ohlo 177 Mill Creek, Pa 193	Mossy Creck, Teun 216
Marshfield, Vt	Millord, Ct 10	Moulton, Ala
Martinsburg, Ohio 176	Millord, Del 14	Mount Airy, N. C 164
	Milford N H 114	Mount Auburn, Ohio 177 Mount Ayr, Iowa 45
Marvavilla Cal 4	Milledgeville, Ga	Mount Bethel, Pa., 193
Marysville, Kan	Millersburg, Ky 52	Mt. Calvary, Ky 52 Mount Carmel, Ill 30
Maryville, Tenn 215	Millersville, Pa 193	I MOUNT CATTON, III
Mason, Mich 97	Allier town. Pa 195	Mt. Clemens, Mich 97
Massachusetts 45	Millville, Ohio 177 Millville, N. Y 136	Mt. Clemens, Mich 97 Mount Gilead, Ohio 177 Mount Holly, N. J 118
Massillon, Ohio 177 Matawan, N. J	Milton, Mass 83	Mt. Holly, Vt 224
Matawan. N. J	Milton, N. H 114 Milton, Pa 193	Mount Jackson, Pa 193 Mount Joy, Pa 193
Protection of Street, or		: mr. m. m. m. m. m. m. m. m. m. m. m. m. m.

D	<b>S</b>	•
Mount Kisco, N. Y 136	Newbern, N. C 165	Newtown, Ct 11
Mount Laurel, N. J 118	New Bethlehem, Pa 193	New Ulm, Minn 100
Mount Lebanon, La 55	New Bloomfield, Pa 194	New Utrecht, N. Y 136
Mount Morris, Ill 30 Mount Morris, N. Y 136	New Braintree, Mass 84 New Brighton, N. Y 130 New Britain, Ct 10 New Britain, Pa 194	New Wied, Tex 219 New Wilmington, Pa 194
Mount Pleasant Iowa. 45	New Britain, Ct 10	New Wilmington, Pa 194 New Windsor, Md 68
Mount Pleasant, Mo 106	New Britain, Pa 194	New York, Iowa 45
Mount Pleasant, Mo 106 Mount Pleasant, N. C., 164 Mount Pleasant, Ohio 177	New Brunswick, N. J 118 Newburg, Ohio 177	New York, N. Y 136-155
Mount Pleasant, Pa 193	Newhord Pa 104	Niagara Falls, N. Y 155
Mount Pleasant, Utah. 220	Newburg, N. Y 136	New York, N. Y 136-155 Niagara Falls, N. Y 155 Nicholville, N. Y 155 Nicholville, N. Y 157
Mount Sterling, Ky 52 Mount Union, Ohio 177	Newbury, Mass 84 Newbury, Vt 224	No-falls C4
Mount Union, Ohio 177 Mount Vernon, Ill 30	Newburyport, Mass 84	Norfolk, Va 229
Mount Vernon Mo 45	New Cannun, Ct 10 New Carlisle. Ind 39	Normal, Ill
Mount Vernon, I. wa 48 Mount Vernon, Mo 108 Mount Vernon, N. H 114 Mount Vernon, N. Y. 114	New Castle, Del 14	Norfolk, Va
Mount Vernon, N. Y 136 Mount Vernon, N. C 165	New Castle, Ky 52	Norris Creek, Tenn 216
Mount Varnon Ohio 1771	New Castle, Ind 30 New Castle, Me 63	Norrietown, Unio 178
Mountville, Pa	New Castle, Pa 194	North Adams, Mass 84 North Ampton, Mass 84 North Anson, Me 63 North Bennington, Vt., 224 North Berwick, Me 63
Mount Washingt'n, Md. 68	New Columbus, Pa 194	Northampton, Mass 84
Mount Zion, Ga 21	New Concord, O 177 New Corydon, Ind 39	North Anson, Me 63
Mullica Hill, N. J 118	New Cumberland, Pa 194	North Berwick, Me 63
Manuelo, Ind	New Garden, N. C 105	MOLITOOLO ' WINES 95
Muncietown, Ind 39 Muncy, Pa	New Hagerstown, Q 177 New Hampton, Iowa 46	Northbridge, Mass 84 North Bridgeton Me 63
Murfreesboro, N.C 165	N.W HAMPSHIRE	N. Bridgewater. Mass., 84-5
Murfreesboro, N. C 165 Murfreesboro, Tenn 216	New Hampton, N. H 114	N. Bridgewater. Mass., 84-5 N. Brookfield, Mass 85
Murphysboro, Ill 30 Muscatine, Iowa 45	New Harmony, Ind 39	North Canaan, Ct
MUSKEGOD, MICD 97	New Haven, Vt 224	North Conway, N. H 114
Myerstown, Pa 193	New Holstein, Wis 236	North Craftsbury, Vt 224
Mystic Bridge, Ct 10 Mystic River, Ct 10	New Institute, N. C 165	Northfield Minn 100
	New Holstein, Wis 236 New Institute, N. C 165 New Ipswich, Mass 84 New Ipswich, N. H 114	Northfield, Minn
Nacogdoches, Tex 219 Nantucket, Mass 83 Napa City, Cal 4	NEW JEESEI 110	Northford, Ct 11
Nana City Cal	New Lisbon, Ohio 177 New London, Ct 11	North Gage, N. Y
Naperville, Ill	New London, Ind 39	North Hammond, N. Y., 155
Naples, N. Y 136	New London, Mo 106	North Harpswell, Me 63 North Hebron, N. Y 155 N. Hempstead, N. Y 155
Napoleon, O	New London, N. H 114 New London, Va 229	N. Hempstead, N. Y 155
Nashua. N. H 114	New Lowell, Ind 39 New Market, N. J 118 New Market, N. H 114	North Jay, Me 03
Nashville, Ill	New Market, N. J 118	N. Middleboro', Mass 85 North Parsonfield, Me 63
Nashville, Tenn 216	New Market, N. C., 165	North Reading, Mass 85
Nashville, Tenn 216 Nassau, N. Y 136	New Market, Ohio 178 New Market, Va 229	North Reading, Mass 85 North Salem, N. Y 155 North Scituate, R. I 208 North Shore, N. Y 155
Natchez, Miss	New Market, Va 229 N. Murlborough, Mass. 84	North Scituate, K. 1 208
Natick Mass 83	New Mexico 121	North Stonington, Ct 11
National, Iowa	New Mexico	North Stonington, Ct 11 North Stonington, Pa 194 North Troy, Vt 224 Northumberland, Va 229
Nasareth Pa 103	Newman, Ga 21	North Troy, Vt 229
NEBEASKA 110	New Orleans, La55-59	North vernon, Ind 39
Nebraska City, Neb 110	New Pulmyra, Mo 106	Northwood, N. H 114
Needbam, Mass 83 Neenah, Wis 236	New Paltz, N. Y 136 New Plymouth, Ohio 178	Norwalk, Ct
Negaunee, Mich 97	Newport Ind 90	Norwalk, Ohio
Nemaha City, Neb 110	Newport, Ky 52	Norway, Me 63
Nevada, Iowa 45	Newport, Ky	IN Wrentham Mass K5
Nevada City, Cal 4	New Preston, Ct 11	Norwich, Ct
Nephi, Utah 220	New Providence, Pa 194 New Richmond, Ohio 178	Norwich Vt
New Albany, Ind 80 Newark, Del 14	New Rochelle, N. Y 136	Norwood, Va 229
Newark, Ill 30	New Salem, Mass 84	
Newark, N. Y	New Sheffield, Pa 194 New Shoreham, R. I 208	Nunda, N. Y
	Newton, Iowa 45	1
New Athens, Ohio 177	Newton, Iowa 46 Newton, Mass 84	Oakfield, N. Y 155
New Athens, Ohio	Newton, N. J	Oakham, Mass 85 Oakland, Cal 4
New Berlin, N. Y 136	Newton, Ohio 178	Oaktown, Ind 39
ACM DEFILIT, FR 190	Newton Centre, Mass 84	Oaktown, Ind
Newbern, Iowa 45	Newton Corner, Mass 84	Ocala, Fla 19

Done (	Page.	Phone
Oconee, Ill	Osark, Mo 107	Pike, N. Y
Oconee, Ill		Pikesville, Md 68
Odell, 111 31	Paddock's Grove, Ill 31	
Odessa, N. Y 155	Paducah, Ky	Pine Grove, Cal 4
Orden Centre N V 150	Painesville, Ohio 178	Pine Grove, La
Ogdensburgh, N. Y. 155, 156	Palatine Bridge, N. Y., 156	Pine Village, Ind 39
Ogden, Utah	Palestine, Tex 219	Pine Grove, Pa       203         Pine Village, Ind       39         Piney Woods, La       59
CHIO tores and the contract of the contra	Palmer, Mass	PINKNOVIIIO, LA
Oil City, Pa 194 Oldenburg, Ind 39	Palmyra, Mo 107 Palmyra, N. Y 156	Piqua, Ohio
Old Lyme, Ct 11	Decle Kon 49	Pittefield, Ill
Old Saybrook, Ct 12	Pana, III 31	
Olean, N. Y	Paoli, Ind 39	Pittsfield, Me 64
Olivet, Mich 97	Paw Paw, Mich 97	Pittsfield, N. H
Olney, ill	Paris, Ill	Pittsfield, Me. 64 Pittsfield, N. H 114 Pittsford, Vt 225 Pittsforn, Pa 203 Placerville, Cal 4
Olney, III	Paris, Ky 52	Placerville, Cal 4
Omaha, Neb 110	Puris, Me 04	Flaimbeid, Ct
Onarga, Ill	Paris, Mo	Plaintield, III 32
Oneida, III	Parkersburg, Pa. 194	Plainfield, Ind
Oneida, N. Y	Parkersburg, Pa 194 Parkersburg, W. Va 202	Plainfield, N. J. 119 Plainville, Wis. 236
Untonagon, Mich 97	Parker's Landing, Pa 194	FIRMO, III
Opelika, Ala 2 Opelousas, La 59	Parsonfield, Me	Plantsville, Ct
Opelousas, La 59 Oquawka, Ill 81	Pass Christian, Miss 103	Platte City, Mo. 107
Orange, Mass 85	Pataskala, Ohio 178	Platteville, Wis 236
Orange, N. J 119	Patch Grove, Wis 236	Plattsburg, Mo 167
Orange, N. Y	Paterson, N. J 119	Platteville, Ct. 52 Plaquemine, La. 59 Platte City, Mo. 107 Platteville, Wis. 236 Plattsburg, Mo. 167 Plattsburgh, N. Y 157 Plattsmouth, Neb. 110
Orangeville, Pa 194		Pleasant Hope, Mo 107
OREGON 183	Paulding, Ohio 178 Pawlet, Vt 2:4	Pleasant Ridge, Mo 107
Oregon City, Ore 183 Orford, N. H	Pawtucket, R. J 206	Pleasant Unity, Pa 203
Orrington, Me 64	Payson, Utah	Pleasantville, Ohio 178 Plymouth, Ct 12
Orieans, Ind. 39	Peabody, Mass 85	Plymouth, Mass 85
Urono, Me 64	Peacedale, R. I 208	Plymouth, Mich 98
Orovine, Cal	Peabody, Mass	Plymouth, N. H
Orwell, Ohio	Pekin, Ill	Point Bluff, Wis 236
Orwigsburg, Pa 194	Pella, Iowa 46	Pointe Coupee, La 59
Osceola, Iowa	Pembroke, N. H 114	Point Pleasant, Pa 203 Poland, Ohio
Oagood, Ind. 30	Penfield Ga. 21	Polo, Ill 38
	Penfield, N. Y 156	Pomeroy, Ohio 179 Pompey, N. Y. 157
Usnkosn, W18 236	Pennington, N. J 119	Pompey, N. Y 157
Oskaloosa, Iowa		Poolville, N. Y
Onwego, Iowa 46	Pennsylvania	
Oswego, Kan 48	rensacoia, ris iv	Pontotoc, Miss 103
Oswego, N. Y 156 Oswego, Ore 183	Peoria, Ill	Portage, Wis
Oswego, Iowa	Peoria, Ill	Port Chester, N. Y 157
	Perry, Ga 22	TOTA OTDOOM WINDS TAN
Ottawa, Ili	Perry, N. Y 157	Port Henry, N. Y 157
Otto, Ind	Perry, Ga	Port Huron, Mich 98 Port Jervis, N. Y 157
Ottokee, Ohio 178	Peru, Ill 32	Portland, Ct. 12 Portland, Ind. 39 Portland, Me. 64 Portland, Ore. 183 Portsmouth, Mich. 58
Ottumwa, Iowa	Peru, Ind	Portland, Ind 39
Ottumwa, Kan	Peru, Neb 110	Portland Ore 183
Ovid, N. Y 156	Petaluma Cal 4	Portsmouth, Mich 58
Ovid, N. Y	Peru, Ind	Portsmouth, N. H 113
Owensboro, Ky 52	Peterboro, N. Y 157	Portsmouth, Ohio 179
Owensyille, Ind	Petersburg, Va 229 Petersham, Mass 85	Portsmouth, R. I 209 Portsmouth, Va 229
Owensville, Ky 52	Patroloum Cantro Pa 105	Portsmouth, Va 229 Post Mills, Vt 225
Owensville, Md 68	Pevely, Mo 107	Potter, Ohio
Oxford, Ct	Philadelphia Pa 105-909	Potedam, N. V 157
Oxford, Ill	Phillipsburg, Pa. 203	Pottstown, Pa 203
Oxford, Miss	Pevely, Mo	Pottsville, Pa 203
Oxford, N. Y	Filliomawi, Ore 183	Poughkeepsie, N. Y 157 Poultney, Vt 225
Oxford, Ohio 178	Phoenix, R. I 208	I TUWILEUMII, AIL
Oxford, Pa 194	Pierpont, Ohio 178	Pownal, Vt 225

Page	l Boss	
Prairie City, Ill 32	Richview, Ill 32	Salem, N. C 165
Prairie City, Ill	Ridge Farm III 32	l Salem. Ohio 179
Prattsburg, N. Y 157	Ridgefield, Ct	Salem, Ore
Prescott, Aris 3 Prescott, Wis 236	Ridgeway, N. Y 158	Salem, Va 236
Prescott, Wis 236 Prescue Isle, Me 64	Ripley O	Salena, Pa
Presque Isle, Me 64 Prestonburg, Ky 52 Princeton, Ill 32	Ripley, O	CAUDA MICO WA
Princeton, Ill	Riverdale, Mass 86	Salisbury, Ct
Princeton, Ind 39	River Falls, Wis 236	Salisbury, Mass 86
Princeton, Ind	Riverpoint, R. I 209	Salisbury, Vt 225
Princeton, Tenn 216	Robbinston, Mc 64	Salt Lake City, Utah 221
Princeville, Ill	Robin's Nest III 82	Salt Lake City, Utah 221 Sampson, N. C 165
Promise City, Iowa 46 Prompton, Pa 203	Robinson, Ill	HAR ARIANIA TOT 210
Prophetstown, Ill 82	Robinson's Sp'gs, Ala 2 Rochester, Ind 40	San Augustine, Tex 219 Sand Lake, N.Y 159
Providence, La 59	Rochester, Ind 40 Rochester, Minn 100	Sand Springs, Iowa 46
Providence, La 59 Providence, N. C 165		Sand Springs, Iowa 46 Sandusky, Ohio 179 Sandy Hill, N. Y 169
Providence, R. L 209	Rochester, Ky 52	Sandy Hill, N. Y 169
Provo, Utah	Rochester, Ky	Sandy Spring, Md 68 Sandwich Mass 86
Pughtown, Pa 203	Rochester, Wis 236	Sandwich, N. H 115
Pulaski, N. Y 157	Rockaway, N. J 119	Sandyville, Iowa 46
Pulaski, Pa	Rockaway, N. Y 150	Sandyville, Iowa 46 San Francisco, Cal 5
Pulaski, Tenn 216	Rock Falls, Ill	San Jose, Cal b
Putnam, Mass 86	Rockford, Minn 100	
Putnam, Ohio, 179	Rockford, N. C 165	2.00
	Rock Grove, Iowa 48	San Kafael, Cal 6
Quaker Bottom, Ohio 179 Ousker Hill, Ind 39	Rock Island, Ill 83	Santaquin, Utah 221
Quaker Hill, Ind 39 Quakertown, Pa 203	Rockland, Me 64 Rockport, Ind 40	Santa Barbara, Cal 6
Quincy, Ill 82	Rockport, Mass 86	Santa Cruz. Cal 6
Quincy, Ill	Rockport, Tex 219	Santa Fé, New Mex 121
Quincy, Mass 86	Kockville, Ct 12	
Quincy, Mich 98	Rockville, Ind 40 Rockville, Md 68	Santa Rosa, Cal 6 Sarahaville, Ohio 179
Racine, Wis 236	Rockville litch 991	Saratoga Springs, N. Y. 159
Rahway, N. J	Rogersville, N. 1 159	3arcox1e. M0 107
Rainsburg, Pa 203 Raleigh, N. C 165	Rogersville, Tenn 216 Rolla, Mo 107	Sardis, Miss
	Rollinsford, N. H 115	Saugus, Mass 86
Randolph, Mass 86	Rome, Ga 22 Rome, N. Y 159	Saultboro, Mass 87
Randolph, Mass	Rome, N. Y 159	Savannah, Ga 22
Ravenna, O 179	Romney W Va 930	Savannah, Ohio 179 Saxonville, Mass 87
Raymond, N. H	Romeo, Mich	Saxton's River Vt 225
Readfield, Me 64	Koseburg, Ore 183	St. Albans, Vt 225
Reading, Mass 86	Rosemount, Minn 100 Rosendale, N. Y 159	St. Albans, Vt
Reading, O	Rosendale, N. Y 159 Round Top. Tex 219	St. Augustine Fig 19
Readville, Mass 86	Round Top, Tex 219 Roxboro, N. C 165	St. Catherine's, Ky 52
Red Creek, N. Y 157	Roxborough, Pa 204	St. Charles, Ill
	Roxbury, Ct	St. Charles, Mo 107
Reeder's Mills Iows 46	Royalton, Vt 225	St. Clair City, Mich 98 St. Clairsville, Ohio 180
Redwing, Minn	Rushford, N 159	St. Cloud, Minn
Reed's Ferry, N. H 115	Rushville, III	St. Croix Falls, Wis 236
Renovo. Pa 204	Rushville, Ind	St. Francis, Wis 236
Republic O 179	Russellville, Ky 52 Rutersville, Tex 219	St. James La 59
Reynoldsborough, Ill., 32	Rutland, Mass 66	St. James, Mo 107
Reynoldsborough, Ill. 32 Rhinebeck, N. Y 157 Rhinecliff, N. Y 157	Rutland, Vt 225	St. John's, Mich 98
Rhinecliff, N. Y 157 Reode Island 208	Saccarappa, Me 64	St. James, Mo
Record Island	Saco, Me 64	St. Joseph, Minn 100
Richland, Mo 107	Sacramento, Cal 4, 5	or angebu, bro 101
Richland Centre, Wis 236 Richmond, Ind 40	Sag Harbor, N. Y 159	St. Joseph's, Pa 204
Richmond, Ky 52	Saginaw City, Mich 98	St. Louis, Mo 107, 108 St. Mary's of the Woods,
Richmond, Ky	Salem, Ala 2	Ind 40
Richmond, Mo 107	Salem, Ill	Ind
Richmond O 179	Salem, Mass 86	St. Menrad. Ind 40
Richmond, O		St. Paul, Minn 100, 101
Richmond, Va 229, 230	Salem, N. Y 159	St. Paul, Ore 183
Richmond Hill, N. C 165	Salem, N. J 119	St. Peter, Minn 101

Pa	ge. I	Page.	Pag
St. Peters, Ind St. Sebald, lowa	40	South Berwick, Me 64	Stillwater Minn is
t. Sebald, lowa	46	South Bethlehem, Pa. 204	Stockbridge, Mass. 57, 1 Stockton, Cal
Scales Mound, III Ichenectady, N. Y Ichenevus, N. Y Ichenolcraft, Mich I	80	Southborough, Mass 87 South Boston, Mass 87	Stockton Minn
chenevus, N. Y	59	South Braintree, Man. 87	Stockton, Tenn
choolcraft, Mich	98	South Densville, N. Y., 160 South Deerfield, Mass., 87	Stockwell, Ind
cio, Ohio 1	179	South Dansville, N. Y., 160	Stoneham, Mass
cio, Ohio 1 coharie, N. Y 1 cotland, Ct	109	South Deerneld, Mass. 87	Stonehhuan De
eranton. Pa 9	m	South Gardner, Mass 87 South Glastenbury, Ct 12	Stouchburg, Pa 2
cranton, Pa	16	South Glastenbury, Ct 12 South Hadley, Mass 87 South Hampton, N. H 115 South Hartford, N. Y 160	Strafford, Vt
leattle, W. Ter 2	31	South Hampton, N. H. 115	Strafford Centre, N. H., 1
leguin Tev	107	South Hero, Vt 225	Stratford, Ct
eguin, Tex elin's Grove, Pa	04		Stroudsburg, Pa. 22 Sturgis, Mich. 22
lelma, Ala	2	South Norwalk, Ct. 12 South Orange, N. J 119 South Paris, Me. 65 South Reading, Mass. 87	Sublimity, Ore 11 Success, N. Y 12 Sudbury, Mass. 13 Suffield, Ct. 14
eneca Falls, N. Y 1	59	South Orange, N. J. 119	Success, N. Y 1
lewickler Pe	ч	South Paris, Me 65	Suggery, Mass
leymour. Ct	12	South Royalton, Vt 225	Sugar Grove. Pa. 2
leima, Ala	40	South Royalton, Vt 225 South Saginaw, Mich 98	Sullivan, Ill
hade Gap, Pa 2 hamokin, Pa 2	04	South Salem, Ohio 179	Sullivan, Ind
имилокии, га S Sharon Ct	12	South Sudbury, Mass 87	Sugar Grove, Pa. 2 Sullivan, Ill. Sullivan, Ind. Summerfield, Aia. Summerville, Miss. 10 Summit Miss. 10
haron, Ctharon, Mass	87	South Vineland, N. J 119 South Wellfleet, Mass. 87	Summit, Miss 1
haron, Miss 1	03	South Weymouth, Mass. 87	I Sumter, N. C. 9
haron, Wis 2	36	Southwick, Mass 87	Sunbury, Pa 2
hawneetown, Ill heboygan, Wis 236, 2 heffield, Mass	33	Southwick, Mass 87 South Woodstock, Vt 225 South Yarmouth, Mass. 87	Sunderland, Mass
heffield, Mass	87	Spalding, Ga 22	Sunman, Ind
ihemeld, Ohio 1	79	Spanish Fork, Utah 221	Superior, Wis 2
helburn Falls, Mass	87	Sparta, Ga 22	Superior, Wis 2 Susp'n Bridge, N. Y 1
shelbyville, Ill Shelby, Ohio 1	33	Sparta, Gs	Susque'a Depot, Pa 2 Swampscott, Mass
helbyville. Ky	62	Spartanburg, S. C 212	Swampscott, Mass
helbyville, Mo 1	107	Spencer, Ind	Swansea, Mass
helbyville, Tenn 2	117	Spencer, Mass 87	Swarthmore, Pa 2
Shelbyville, Ky	78	Spring Arbor Mich 98	Tabor, Iowa
herburne, N. Y 1	59	Spring Bay, Ill 32	Tabor, Iowa
inieldsville. Minn 1	lO1	Spring Bay, III	Talequah, Ind. Ter
hippensburg, Pa hirleysburg, Pa hongo, N. Y	М	Spring Creek, Tenn 217	Talladega, Ala Tallahassee, Fla
Shongo, N. Y 1	100	Springdale, Kan 48 Springdale, Mich 98	Tallula, Ill
norenam, vt 2	25	Springdale, Ohio 180 Springfield, Ill 33	I Laumadge, Unio 18
	69	Springfield, Ill 33	Tama City, Iowa
hrewsbury, Pa 2 libley, Minn 1	201	Springfield La 59	Tamaqua, Pa 2
	46	Springfield, Mass 87 Springfield, Mo 108, 109	Taos, New Mex 1
idney, Ohio 1	79	Springfield, N. C 165	Tarentum, Pa 2
ing Sing, N. Y 1	60	Springfield, Ohio 180	Terrytown N. V
insinawa Mound, Wis 2 kaneateles, N. Y 1	60	Springfield, Vt	Terryville, Ct
kowhegan, Me	64	Spring Hill, Ala 2	Tecumseh, Mich
late, Ind	40	Springmount, Ohio 180	Tell City, Ind
lippery Rock, Pa 9	204 204	Springtown, Utah 221	Temperanceville, Pa 2
methport, Pa 2 mithfield, Minn 1		Spring Valley, Minn 101 Spring Valley, N. Y 160 Springville, N. Y 160	Terra Haute, Ind
lmithfield, R. I 2	900	Springville, N. Y 160	Terre aux Bœufs, La
mithfield, Utah 2	21	Springvate, lowa 10	Teutopolis, Ill
mithville, Ohio 1		Stamford, Ct	Tewksbury, Mass
myrna, Del ociety Hill, S. C 2	14	Stamping Ground, Ky. 53 Standish, Me 65	Texas
ocorro, New Mex 1	21	Stanford, Ky	Theol. Sem., Fairfax
odus, N. Y., 1	LGO	Stapleton, N. Y 160	Thettora, Vt 22
olon, Ohio 1 omers, N. Y 1	79	Starkey, N. Y	Thibodeaux. La
omerset, Ohio 1	79	Statersville, R. L 200	Thomaston, Ct.
omerville, Ala	2	Statersville, R. I 209 Statesville, N. C 168	Thomasville, Ga 2
omerville, Mass	87	Staunton, Va	Thomasville, N. C 16
omerville, N. J 1 omerville, Tenn 2	19	Steele's Mills, Ill	Thompson, Ct
onoma, Cal	6	Sterling, Mass	Thorn Hill, N. Y 16
onora, Cal	6	Steven's Plains, Me 65	Three Rivers, Mich 9
outhampton, Mass outh Adams, Mass	87	Steubenville, Ohio 180	Tidioute, Pa 20
outh Adams, Mass outh Bend, Ind	87	Stewartsville, Mo 109 Stilesboro, Ga 22	Time, Unio 18
Auth Della' Ina	W I	othesouro, on	111VII, N. II 11

#### INDEX

Tipton, Ind 40	Valparaiso, Ind 40	Washington Col., Tenn 217
Tipton, Iowa 46	Van Buren, Ark	Washington, Utah 221
Tisbury, Mass 88	Van Buren, Ark	
Titusville, Pa 205 Tiverton, R. I 210	Vandalia, Ill 34	Waterbury, Ct
Toledo, Ohio 180		Waterbury Centre.Vt 226
Toledo, Ohio 180 Tolland, Ct 13	Venango, Pa	Waterford, N. Y 162
Topeka, Kan 48	Vermillionville, La 59	Waterford, Pa 205
Topeka, Kan	Vermon, Ind	Waterjory, Ct
Tongaloo, M188 103	vernon, N. I 162	Waterloo, N. Y 162 Waterloo, Wis 237
Tontogany, Ohio 181 Toquersville, Utah 221	Verona, N. Y 162	Waterloo, Wis 237 Watertown, Ct
Torresdale, Pa 205	Versailles, Ky 53	Watertown, Ct
Torringford, Ct 13	Versailles, Mo 109 Versailles, N. Y 162	Watertown, N. Y 162
Toulon, Ill	Vevay, Ind	Watertown, Mass
	Village Green, Pa 205	Watkins, N. Y 162
Townshend, Vt 225	Villa Nova, Pa 205	Wattehuwe Da 2.35
Tremont, N. Y	VIIIa Kidge, III 34 i	Waukegan, Ill
Trenton, Mich. 98	Vincennes, Ind	Waupacca, Wis 237
Trenton, Mich	Vineyard Haven, Mass. 88	Waupun, Wis 217
Trenton N.J 110	Virgin City, Utah 221	Waushara, Wis 237 Waveland, Ind 41
Trenton, Ohio	Virginia, Ill	WAVERIU IOWA 40
Trinidad, Col 6	Virginia, Nevada 111	Waverly, Mo 109 Waverly, N. Y 162
	Virginia, Nevada	Waverley, Pa 205
Troy, Kan	Visalia, Cal	Waverley, Pa 205 Waverly, Tex 219
Troy, Ohio 181	Volima, Mich 98	Wayland, Mass 88
Troy, Pa 206	Wahash, Ind 41	Wayne, N. Y
Trumansburgh, N. Y 161 Truro, Mass 88	Waco, Tex 219	Weare, N. H 115
Tucson, Ariz 3	Waconia, Minn 101	Webster, Mass 88
Tupper's Plains, Ohio, 281 Turbutville, Pa 205	Waitsfield, Vt	Webster City, Iowa 46
Turbutville, Pa	Wakefield, N. H 115	Webster, Mass       88         Webster, N. Y.       162         Webster City, Iowa       46         Weedsport, N. Y.       162         Weldon, N. C.       160         Wellesty Mess       88
Tuscarora, Pa	Waldoboro, Me 65 Walhalla, S. C 213	Wellesiy, Mass 88
IUPECKCO, AM	Walla Walla, Wash, T., 211	Wellsborough, Pa 206 Wellsville, Ohio 181
Twinsburg, Ohio 181 Tyler. Tex. 219	Wallingford, Ct	Wenona, Mich 98
Tyngsboro', Mass 88	waitham, mass 88	Wentworth, N. H 115
Tyrone, Pa 205	Walthourville, Ga 22	Wentworth, N. C 166 West Amerbury, Mass. 88
Unadilla, N. Y 161	Walton, N. Y 162 Walworth, N. Y 162	Westboro, Mass 88, 89
Unadilla, N. Y	Wapello, Iowa	West Bradford, Pa 206 West Brattleboro, Vt 226
Underhill Center, Vt 225 Union, La	Warner N. H 115	West Brattleboro, vt 220
Union, N. H 115	Wathena, Kan	Westbrook, Me 65
Union City, Mich 98 Union Landing, La 59	Warren, Mass 88 Warren, Ohio 181	West Brookfield, Mass 89
Union Springs, N. Y 161	Warren, Pa 2 5	Westerly, R. I 210 Western, Iowa 46
Uniontown, Pa 205	Warren, R. I 210	Westerville, Ohio 181
Unionville, Pa 205 Unionville, S. C 213	Warrensburg, Mo 109 Warrensburgh, N. Y 102 Warrenton, Mo 109	West Farmington, O 181 West Farms, N. Y 162
Unity, Me 65	Warrenton, Mo 109	Westfield, Ill 34
Unity, Pa 205	Warrenton, N. C 166 Warrenville, Ill 34	Westfield, Mass 89 Westfield, N. J 120
University Place, Tenn 217 Upland, Pa 205	Warsaw, III	Westfield, N. Y 162
Upper Alton, Ill 34	Warsaw Ind 41	Westfield, Pa 206
Upper Mariboro, Md 68 Upper Merion, Pa 205	Warsaw, Minn 101 Warsaw, N. Y 162	Westfield, N. Y
Upper Sandusky, O 181	Warsaw, N. Y	Westchester, N. Y 162 Westchester, Pa 206
Upper Sandusky, O 181 Urbana, III 34 Urbana, Md 68	Warwick, R. I 210	West Cornwall, Ct 13
Urbana, O 181	wasnington, ark 3	West Gardiner, Me 65
UTAH 220	Washington, D. C 15, 16	West Gorham, Me 65
Utica, Mich 98 Utica, Miss 103	Washington, Iowa 46	West Grove, Pa 206 West Hartford, Ct 13
Utica, N. Y 161, 162	Washington, La 59	West Haven, Ct 13
Utica, Pa 205	Washington, La 59 Washington, Miss 103 Washington, N. H 115	West Haverford, Pa 206 West Hebron, N. Y 162
Vacaville, Cal 6	Wannington, N. C 166	West Hoboken, N. J 120
Valle Crucis, N. C 166	Washington, Ohio 181	West Killingly, Ct 13 West Lebanon, Me 65
Vallejo, Cal 6	Washington, Pa 205	1 11 car necessor, me

_	_	_
Page.	Page,	Page.
West Lebanon, N. H 115	Wickford, R. I 210	Wiscasset, Me 65
West Liberty, Iowa 46	Wilbraham, Mass 89	W18CONSIN 233
West Liberty, Ohio 181	Wilbur, Ore 183	Woburn, Mass 90
West Liberty, W. Va 232	Wilkesharre, Pa 206	Woodbury, Ct 14
West Medford, Mass 89	Wilkinsburg, Pa 206	Woodbury, N. J 120 Woodhull, N. Y 163
West Meriden, Ct 13	Willet's Point, N. Y 163	Woodland, Cal
Westminster, Mass 89 Westminster, Vt 226	Williamsboro, N. C 166	Woodsboro, Md 68
	Williamsburg, Pa 206   Williamsburg, Va 230	Woodsfield, Ohio 181
Westmoreland, N. H 115 West Newton, Mass 89	Williamsport, Pa 206	Woodstock, Ct 14
West Newton, Mass 89 Weston, Mass 89	Williams Centre, Ohio, 181	Woodstock, Ill 34
West Philadelphia, Pa. 206	Williamsville, N. Y 163	Woodstock, Vt 223
West Pitteton, Pa 206	Williamstown, Mass 89,90	Woodstown, N. J 120
West Point, Ga 22	Willimantic, Ct 13	Woodvale, Pa 2.6
West Point, Iowa 46	Williston, Vt 226	Woodville, Tex 219
West Point, N. Y 163	Willon, N. H 115	Wolcott, N. Y 163
Westport, Ct 13	Willoughby, Ohio, 181	Wolcottville, Ct 13
Westport, Mo 109	Wilmington, Del 14, 15	Wolfeborough, N H 115
Westport, N. Y 168	Wilmington, N. C 166	Wolletsburgh, N. Y 163
West Randolph, Vt 226	Wilmington, Vt 226	Woonsocket, R. I 210
West River, Md 68	Wilson, Ill	Wooster, Ohio 181
West Roxbury, Mass 89	Wilson, N. Y 163	Worcester, Mass 90
West Rutland, Vt 226	Wilson, N. C 166	Worthington, Ohio 181
West Salem, Wir 237	Wilton, Ct 13	Wrentham, Mass 91
West Senecs, N. Y 162	Wilton, Iowa 46	Wyandotte, Kan 48
West Tisbury, Mass 89	Wilton, Me 65	Wyandotte, Mich 98
West Town, Pa 206	Winchendon, Mass 90	Wyntton, Ga 22
West Townrend, Mass 89	Winchester, Ind 41	WYOMING 237
West Troy, N. Y 163	Winchester, Ky 53	Wyoming, Del 15
West Union, Iowa 46	Winchester, Mass 90	Wyoming, N. Y 163
West Union, Ohio 181	Winchester, Va 230 Winchester, Tenn 217	Wyoming, Pa 206, 207
WEST VIRGINIA 231	Winchester, Tenn 217	- 1. Old
Westville, Mass 89	Windham, Mass 90	Xenia, Ohio 181, 182
West Winfield, N. Y 163	Windham, N. H 115	Vadletanilla W O 100
West Winsted, Ct 13	Windsor, Ct	Yadkinville, N. C 166
Wethersfield, Ct 13	Windsor, N. Y 163	Yarmouth, Me 65
Wetumpka, Ala 2   Weybridge, Vt 228	Windsor, Vt 226 Windsor Locks, Ct 13	Yarmouth, Mass 91
Weybridge, Vt 226   Weymouth, Mass 89	Windsor Locks, Ct 13 Winetka, Ill 34	Yarmouthport, Mass 91 Yates, N. Y 163
Whatcom, Wash. Ter 231	Winnebago City, Minn. 101	Yellow Springs, Ohio 182
Whately, Mass 89	Winnfield, La 59	Yonkers, N. Y 163
Wheaton, Ill 34	Winnsboro, S. C 213	York, Pa 37
Wheeling, W. Va 232	Winons, Minn 101	York Prairie, Iowa 46
Whippany, N. J 120	Winona, Ohio 181	York Springs, Pa 207
Whipstown, Ohio 181	Winooski, Vt 226	Yorkville, N. Y 163
Whiteomb, Ind 41	Winslow, N. J 120	Youngstown, Ohio 182
Whitehall, N. Y 163	Winsted, Ot 13	Ypsilanti, Mich 98
White Plains, N. Y 163	Winterset, Iowa 46	Yreka, Cal 6
Whitestown, N. Y 163	Winthrop, Me 65	
Whitewater, Wis 237	Wirt Ind 41	Zanesville, Ohio 182
Whitesville, Mass 89	Wirtemburg, Pa 206	Zelienople, Pa 207
Whitney's Point, N. Y. 163	<b>U</b> ,	

## SMITHSONIAN MISCELLANEOUS COLLECTIONS.

243

## LIST

# FOREIGN CORRESPONDENTS

OF THE

### SMITHSONIAN INSTITUTION.

CORRECTED TO JANUARY, 1872.

[FOURTH EDITION.]



WASHINGTON:
SMITHSONIAN INSTITUTION.
APRIL, 1872.

#### ADVERTISEMENT

THE following publication is a list of the foreign establishments with which the Smithsonian Institution is, at the present time, in correspondence. It embraces the names of all the Institutions that have come to its knowledge having for their object the increase or diffusion of knowledge, or from which serial publications have been received up to the date mentioned on the title-page.

As new-editions of the list will be published from time to time, the Smithsonian Institution desires to receive any information relative to new addresses, changes of title or character of the old ones, typographical errors, etc.

JOSEPH HENRY,

Secretary S. I.

SMITHSONIAN INSTITUTION, WASHINGTON, April, 1872.

(2)

PHILADELPHIA: COLLINS, PRINTER.

## CONTENTS.

					Page	1					:	Page
General	•	•	•	•	1	ITALY .	•	•	•	•		44
Scandinavia		•	•	•	1	Portuga	<b>L</b> L	•		•		48
Sweden					1	Spain	•			•		48
Norway	•		•		2	GREAT 1	Brita	IN AD	d Irr	T.A.F.D		49
ICHLAND			•		3	GREECE				•		58
Denmark	•	•		•	3	Turkey						58
Russia .		•	•		4	AFRICA	•				•	59
THE NETHER	LAND	в.	•		11	Asia		•	•	•		59
Germany, i	nclud	ling	Ausr	B0-		AUSTRAI	MA.	•				60
Hungary	•	•	•	•	14	New Ze	ALAN	D				61
S <del>witzer</del> lani	•	•	•	•	32	POLYNES	II.A.			_		62
Belgium	•		•	•	33	AMBRICA		clusi	re of	Britis	ah.	-
FRANCE	•	•		•	36	Amer	•	•	•	•	•	62
•	•											

(3)

. 

#### LIST

07

## FOREIGN CORRESPONDENTS.

#### GENERAL.

- 1 Association Internationale pour le progrès des Sciences Sociales.
- 2. Congrès International d'Archéologie préhistorique.
- 3. Congrès International de Statistique.
- 4. Convention Télégraphique Internationale.

#### SCANDINAVIA.

 Skandinaviske Naturforskeres Forsamling (Scandinavian Society of Naturalists).

#### SWEDEN.

- 6. Götheborg Kongliga Vetenskaps- och . Vitterhets Samhället (Royal Society of Science and Belles-Lettres).
- 7. Lund-Fysiografiska Sällskapet (Physiographic Association).
  - 8. Kongliga Universitetet. (Royal University.)
  - 9. Nordisk Tidsskrift för politik, ekonomi och litteratur (Northern Journal for Politics, Economy, and Literature).
  - 10. Universitets Observatoriet. (University Observatory.)
- 11. Stockholm—Farmaceutiska Institutet. (Pharmaceutical Institution.)
  - 12. Geologiska Byran. (Geological Bureau.)
  - 13. Kongliga Biblioteket (Royal Library).
  - 14. Kongliga Landtbruks-Akademien (Royal Academy of Agriculture).
  - Kongliga Svenska Vetenskaps Akademien (Royal Swedish Academy of Sciences).
  - 16. Kongliga Vitterhets- Historie- och Antiquitets-Akademien (Royal Academy of Belles-Lettres, History, and Antiquities).

1

- 17. Observatoriet.
- 18. Statistiska Central-Byrån. (Central Bureau of Statutics.)
- 19. Svenska Akademien. (Swedish Academy.)
- Svenska Läkare-Sällskapet (Swedish Society of Physicians).
- 21. Upsala-Kongliga Universitetet. (Royal University.)
  - Kongliga Vetenskaps-Societeten (Royal Society of Sciences).
  - 23. Universitets Observatoriet. (University Observatory.)
- 24. Vesterås—Elementar Läroverkets Bibliotek. (Library of the Normal School.)

#### NORWAY.

- 25. Arendal—Arendals-Museum. (Arendal Museum.)
- 26. Bergen—Bergenske Museum. (Bergen Museum.)
  27. Observatoriet.
- 28. Christiania—Foreningen til Norske Fortidsmindesmærkers Bevaring (Society for the Preservation of Norwegian Antiquities).
  - 29. Kongelige Norske Frederiks Universitetet.
  - 80. Kongelige Selskabet for Norges Vel (Royal Society for the progress and prosperity of Norway).
  - 31. Medicinske Selskab. (Medical Society.)
  - 32. Militaire Samfund. (Military Society.)
  - Ministère de l'Interieur du Gouvernement Royal de Norvege: Division des Recherches géologiques en Norvège.
  - 34. Ministère de l'Interieur du Gouvernement Royal de Norvege: Division topographique et hydrographique.
  - 85. Norske Meteorologiske Institut. (Norwegian Meteorological Institution.)
  - 36. Norske Oldskrift-Solskab. (Norwegian Antiquarian Society.)
  - 37. Norske Sagförer-Forening. (Norwegian Lawyer's Society.)
  - 38. Norske Tourist-Forening. (Norwegian Tourist's Society.)
  - 89. Physiographiske Forening. (Physiographic Society.)
  - 40. Polytekniske Forening. (Polytechnic Society.)
  - 41. Selskabet for Folkeoplysningens Fremme. (Society for Development of Popular Instruction.)

- 42. Theologiske Forening. (Theological Society.)
- 43. Universitets Observatoriet i Christiania.
- 44. Videnskabs-Selskabet i Christiania (Scientific Society of Christiania).
- 45. Stavanger—Norske Missions-Selskab. (Norwegian Missionary Society.)
- 46. **Trondhjem** (**Drontheim**)—Kongelige Norske Videnskabs-Selskabet (*Royal Norweyian Society of Science*).

#### ICELAND.

- 47. Reykjavik—Islands Stiptsbókasafn (Library of the Icelandic Diocese).
  - 48. Hit Islenzka Bokmentafelag (Scientific Association of Iceland).

#### DENMARK.

- 49. **Kjöbenhavn** (Copenhagen)—Botaniske Forening (Botanical Society).
  - 50. Historisk Tidsskrift (Historical Journal).
  - 51. Islandske Litterære Selskab (Icelandic Literary Society).
  - 52. Kongelige Bibliothek (Royal Library).
  - 53. Kongelige Danske Selskab for Fædrelandets Historie og Sprog (Royal Danish Society of National History and Language).
  - Kongelige Danske Videnskabernes Selskab (Royal Danish Society of Science).
  - 55. Kongelige Geheime-Archiv (Royal Court of Records).
  - Kongelige Landhuusholdnings-Selskab (Royal Society of Rural Economy).
  - 57. Kongelige Medicinske Selskab (Royal Medical Society).
  - 58. Kongelige Nordiske Oldskrift-Selskab (Royal Society of Northern Antiquaries).
  - Kongelige Statistiske Bureau (Royal Statistical Bureau).
  - 60. Kongelige Veterinair- og Landbohöiskole (Royal Veterinary and Agricultural School).
  - 61. Naturhistoriske Forening (Natural History Society).
  - 62. Naturhistorisk Tidsskrift (Journal of Natural History).
  - 63. Polytekniske Leereanstalt. (Polytechnic School)
  - 64. Samfundet til den Danske Literaturs Fremme (Society for the Advancement of Danish Literature).

- 65. Sökaart-Archivet (Hydrographic Office).
- 66. Tidsskrift for Philologi og Pædagogik (Philological Journal).
- 67. Tidsskrift for populære Fremstillinger af Natur-Videnskaberne (Journal for Popular Natural Science).
- 68. Tidsskrift for Veterinairer (Veterinary Journal).
- 69. Universitetets Astronomiske Observatorium.
- 70. Universitets-Bibliotheket.
- 71. Universitetets Botaniske Have (Botanical Garden of the University).
- 72. Universitetets Mineralogiske Museum (Mineralogical Museum of the University).
- 73. Universitetets Zoologiske Museum (Zoological Museum of the University).
- 74. Veterinær-Selskab (Veterinary Society).

#### RUSSIA.

- 75. Arkangel—Flotskaja Biblioteka (Naval Library).
- 76. Astrakhan—Obschestvo Morskikh Wrachey (Society of Naval Physicians).
- 77. Barnäul—Meteorologicheskaia Observatoria (Meteorological Observatory).
- 78. Catharineburgh Meteorologicheskaia Observatoria (Naval Observatory).
- 79. Derpt (Dorpat)—Derptskoe Obschestvo Estestvoispitateley (Society of Naturalists of Dorpat).
  - 80. Imperatorskaia Astronomicheskaia Observatoria (Imperial Astronomical Observatory).
  - 81. Kaiserliche Livländische Œkonomische Societät.
  - 82. Ouchenoe Estonskoe Obschestvo (Scientific Esthonian Society).
  - 83. Ouniversitet (University).
  - 84. Veterinär-Schule.
- 85. **Helsingfors**—Finska Litteratur-Sällskapet (Society for Finnish Literature).
  - 86. Finskoe Ouchenoe Obschestvo (Finnish Scientific Society).
  - 87. Kejserliga Alexanders-Universitetets i Finland.
  - 88. Magnitnaia i Meteorologicheskaia Observatoria (Magnetical and Meteorological Observatory).

- 89. Obschestvo Finliandskikh Wrachey (Society of Physicians of Finland).
- 90. Sällskapet pro Fauna et Flora Fennica.
- 91. Irkootsk—Geograficheskoe Obschestvo (Geographical Society).
- 92. Jaroslavl-Demidovskoy Litsey (Demidoff's Lyceum).
- 93. Kasan—Imp. Kasanskoy Ekonomicheskoe Obschestvo (Imperial Economical Society).
  - 94. Imperatorskoy Kasanskoy Ouniversitet (Imperial University of Kazan).
  - 95. Obschestvo Jestestwo-Ispytatelej pri Kasanskom Universitete (Society of Naturalists at the Imperial University of Kasan).
  - 96. Observatoria (Observatory).
- 97. Kharkow—Obschestvo Ispytatelej prirody (Society of Naturalists at the University of Kharkow).
  - 98. Ouniversitet (University).
  - 99. Veterenarnoje Utshilistshe (Veterinary School).
- 100. **Kiew**—Imperatorskoy Ouniversitet Sviatago Vladimira (Imperial University of the Holy Vladimir).
  - 101. Kiewskoje Obschestvo Jestestwo-Ispytatelej (Society of Naturalists at the University of the Holy Wladimir).
  - 102. Observatoria (Observatory).
- 103. Kronshtadt (Cronstadt)—Compasnaia Observatoria (Compass Observatory).
  - Kronshtadtskaia Morskaia Biblioteka (Naval Library of Cronstadt).
  - 105. Morskaia Astronomicheskaia Observatoria (Naval Astronomical Observatory).
  - 106. Obschestvo Morskikh Wrachey (Society of Naval Physicians).
- 107. Lebedjan (Government Tambow) Lebedjanskoje Obschestvo Selskago Khoziaystva (Society of Rural Economy of Lebedjan).
- 108. Mitava (Mitaw)—Kurliandskoe Obschestvo Literatoori i Iskoostv (Courland Society of Literature and Art).
- 109. Moskva (Moscow)—Chertkovskaia Poublichnaia Biblioteka (Chertkoff's Public Library).
  - 110. Commercheskaia Akademia (Commercial Academy).
  - 111. Etnograficheskoy Mouzey (Ethnographical Museum).

- 112. Fisiko-Medizinskoe Obschestvo (Physico-Medical Society).
  - 113. Imper. Moskovskoy Obschestvo Jestestwo-Ispitatelej (Imper. Society of Naturalists of Moscow).
  - 114. Imper. Moskovskoy Ouniversitet (Imper. University
    - of Moscow). 115. Imper. Obschestvo Istorii i Drevnostey Rossiyskikh pri Moskovskom Ouniversitete (Imperial Society of Russian History and Antiquities of the University of Moscow).
  - 116. Imper. Obschestvo Ljubitelei Jestestwosnanija, Antropologii i Etnografii (Imp. Society of Friends of Natural Sciences, Anthropology, and Ethnography).
    - 117. Imper. Obschestvo Selskago Khoziaystva (Imperial Society of Rural Economy).
    - 118. Juriditsheskoje Obschestvo (Juridical Society). 119. Lasarewskij Institut Wostotshnych Jasykow (The Lasarew-Institution of Oriental Languages).
    - 120. Moskovskoy Arkheologicheskoe Obschestvo (Archæological Society of Moscow). 121. Moskovskov Matematitsheskoje Obschestvo (Mosco-
    - vian Mathematical Society). 122. Moskovskoy Poublichnoy Mousey (Public Museum of Moscow).
    - 123. Mouzey Kniazia Sergia Mikhailovicha Galizina (Prince
      - Sergius Galizin's Museum).
    - 124. Obschestvo Akklimatisazii Rastenij i Jiwotnych (Seciety of Acclimatization of Plants and Animals).

125. Obschestvo drewne-russkago iskusstwa, pri Moskovskom Publitshnom i Rumjanzowskom Musejach (So-

- ciety of Old-Russian arts, at the Moscovian Public and Rumjanzow-Museums). 126. Obschestvo Lubiteley Khoudogestv (Society of Ama-
- teurs of Fine Arts). 127. Obschestvo Lubiteley Rossiyskoy Slovesnosti (Society
- of Amateurs of Russian Literature).
- 128. Observatoria (Observatory). 129. Petrovskaia Agronomicheskaia Academia (Petroffiky
  - Agricultural Academy). 130. Roumianzovskaia Biblioteka i Mouzey (Count Room
    - ianzoff's Library and Museum).

7

- 181. Rousskoe Obschestvo Ljubitelei Sadovodstva (Russian Society of Friends of Horticulture).
- 132. Slavianskoy Komitet (Slavonic Committee).
- 133. Narwa—Narwskoje Arkheologicheskoe Obschestvo (Archæological Society of Narwa).
- 134. Negin-Litsey Grafa Bezborodko (Count Bezborodko's Lyceum).
- 135. Nertshinsk—Meteorologicheskaia Observatoria (*Meteorological Observatory*).
- 136. Nicolaev-Observatoria (Observatory).
- 137. Nicolaevsk (na Amoore) Obschestvo Morskikh Wrachey (Society of Naval Physicians).
- 138. Odessa—Glavnoś Ouchilische Sadovodstva (Chief Horticultural School).
  - 139. Gorodskaiá Poublichnaia Biblioteka (Public City Library).
  - 140. Noworossijskoje Obschestvo Jestestwo-Ispytatelej (Society of Naturalists of New-Russia).
  - 141. Obschestvo Selskago Khoziaystva Yoojnoy Rossii (Society of Rural Economy of Southern Russia).
  - 142. Odesskoć Obschestvo Istorii i Drevnostey (Historical and Antiquarian Society of Odessa).
  - 143. Ouchilische Gloukho-nemikh (Deaf and Dumb Institution).
  - 144. Ouniversitet (University).
  - 145. Poublichnaia Biblioteka (Public Library).
- 146. Omsk—Obschestvo Issljedowatelej Zapadnoj Sibiri (Society of Explorers of Western-Siberia).
- 147. Orenburg—Otdjel Imperatorskago Rousskoe Geograficheskoe Obschestvo (Section of the Imperial Russian Geographical Society).
  - 148. Poublichnaia Biblioteka (Public Library).
- 149. Poulkovo (Pulkova)—Nicolaevskaia Glavnaia Observatoria (Nicholas Chief Observatory).
- 150. Revel (Reval)—Estliandskoe Literatournoe Obschestvo (Estland Literary Society).
- 151. Riazan-Poublichnaia Biblioteka (Public Library).
- 152. Riga-Lettische Litterärische Gesellschaft.
  - 153. Mouzey (Museum).
  - 154. Obschestvo Jestestwo-Ispitatelej (Society of Naturalists).

- 155. Obschestvo Istorii i Drevnostey Rousskikh Pribaltiskikh Provinziy (Historical and Antiquarian Society of the Russian Bultic Provinces).
  - 156. Obschestvo Practicheskikh Wrachey (Society of Practical Physicians).
  - 157. Technicheskoe Obschestvo (Technical Society).
- 158. Sanct-Peterbourg (St. Petersburg)—Ego Velichestvo Imperator Vserossiyskoy (His Imperial Majesty the Emperor of Russia).
  - 159. Arkeograficheskoe Commissia, pri Ministerstwe Narodnago Prosswessthenija (Archæographical Commission of the Ministry of Public Instruction).
  - 160. Filologitsheskoje Obschestvo, pri St. Peterburgskom Universitete (Philological Society of the University of St. Petersburgh).
  - 161. Hidrograficheskoy Departament Morskago Ministerstva (Hydrographical Department of the Ministry of Marine and Depot of Naval Charts of Russia)
  - 162. Imper. Akademia Nauk (Imperial Academy of Sciences).
  - 163. Imper. Alexandrovskoy Litsey (Imp. Alexander Lyceum).
  - 164. Imper. Arkheologicheskaia Commissia (Imper. Archæological Commission).
  - 165. Imper. Arkheologicheskoe Obschestvo (Imperial Archeological Society).
  - 166. Imper. Botanitsheskij Ssad (Imperial Botanical Garden).
  - 167. Imper. Farmazevticheskoe Obschestvo (Imper. Pharmaceutical Society).
  - 168. Imper. Istoriko-Filologitsheskij Institut (Imperial Historico-Philological Institution).
  - 169. Imper. Michailovskaia Artilleriyskaia Academia (Imper. Michael Artillery Academy).
  - 170. Imper. Nicolaevskaia Ingenernaia Academia (Imper. Nicolas Engineering Academy).
  - 171. Imper. Nicolaevskaia Voennaia Academia (Imper. Nicolae Military Academy).
  - 172. Imper. Ouchilisché Gloukho-nemikh (Imp. Institution for Deaf and Dumb).
  - 173. Imper. Poublichnaia Biblioteka (Imperial Public' Library).

- 174. Imper. Rousskoe Geograficheskoe Obschestvo (Imperial Russian Geographical Society).
- 175. Imper. Rousskoe Mineralogicheskoe Obschestvo (Imper. Russian Mineralogical Society).
- 176. Imper. St. Peterbourgskaia Academia Khoudogestv. (Imper. St. Petersburg Academy of Fine Arts).
- 177. Imper. St. Peterbourgskoy Ouniversitet (Imper. University of St. Petersburg).
- 178. Imper. Tekhnologicheskoy Institut (Imp. Technological Institution).
- 179. Imper. Utshilistsche Prawowjedjenija (The Imperial Law School).
- 180. Imper. Volnoe Ekonomicheskoe Obschestvo (Imperial Free Economical Society).
- 181. Institutt Korpussa Poutey Saobschenia (The Institution of the Engineers of Public Works).
- 182. Institutt Poutey Saobschenia (Civil Engineering Institution).
- 183. Institute Slepikh (Institution for the Blind).
- 184. Lesnaia Akademia (Forest Academy).
- Medico-Khirourgicheskaia Academia (Medico-Chirurgical Academy).
- 186. Ministerstvo Narodnago Prosveschenia (Ministry of Public Instruction).
- 187. Morskaia Academia (Naval Academy).
- 188. Morskoe Ministerstvo (Ministry of the Marine).
- 189. Morskoy Mouzey (Marine Museum).
- 190. Morskoy-Ouchenoy Comitet (Scientific Committee of the Marine).
- 191. Muse' Imperatorskoj Akademii Nauk (The Museums of the Imperial Academy of Sciences).
- 192. Museï Imperatorskago Ermitasha (The Museums of the Imperial Hermitage).
- Musei Gretsheskikh i Rimskikh Drewnostej (The Museum of Greek and Roman Antiquities).
- 194. Musel Instituta Korpussa Gornykh Inshenerow (The Museum of the Mining Corps).
- 195. Obschestvo Jestestwo-Ispytatelej, pri St. Peterburgskom Universitete (Society of Naturalists at the University of St. Petersburgh).

- 196. Obschestvo Morskikh Wrachey (Society of Naval Physicians).
- 197. Obschestvo Rossiyskago Sadovodstva (Society of Russian Horticulture).
- 198. Pedagogitsheskoje Obschestvo (Pedagogical Society).
- 199. Rousskoe Entomologicheskoie Obschestvo (Russian Entomological Society).
- Rousskoe Istoritsheskoje Obschestvo (Russian Historical Society).
- 201. Rousskoe Khimitsheskoje Obschestvo, pri St. Peterburgskom Universitete (Russian Chemical Society of the University of St. Petersburgh).
- 202. Selsko-Khosjajstwennyj Musej (The Rural-economical Museum).
- 203. Shtab Korpousa Gornikh Ingenerov (Staff of the Corps of Mining Engineers).
- 204. Slavianskoy Komitet (Slavonic Committee).
- 205. Statisticheskoy Zentralnoy Komitet (Central Statistical Committee).
- 206. Tekhnicheskoe Obschestvo (Technical Society).
- 207. Uttshenyj Komitet Ministerstva Gossudarstwennykh Imustshestw (Scientific Committee of the Ministry of Domains).
- 208. Voennoe Ministerstvo: Topograficheskoe Buro (Ministry of War: Topographical Bureau).
- 209. Vostochnoy Institute (Oriental Institute).
- 210. Zemledelcheskoy Instituti (Agronomical Institution).
- 211. Zentralnaia Fisioheskaia Observatoria (*Central Physical Observatory*).
- 212. Tiflis—Kavkazskoe Geograficheskoe Obschestvo (Caucasian Geographical Society).
  - 213. Kavkazskoe Mouzey (The Caucasian Museum).
  - 214. Kavkazskoe Obschestvo Selskago Khozaiystva (Caucasian Society of Rural Economy).
  - 215. Magnitnaia i Meteorologicheskaia Observatoria (Magnetical and Meteorological Observatory).
  - 216. Poublichnaia Biblioteka (Public Library).
- 217. Toola—Poublichnaia Biblioteka (Public Library).
- 218. Vilna Arkheologicheskaia Kommissia (Archeological Commission).

- 219. Astronomicheskaia Observatoria (Astronomical Observatory).
- 220. Imp. Medizinskoje Obschestvo (Imperial Medical Society).
- 221. Musej Drewnostej (The Museum of Antiquities).
- 222. Otdjel Imp. R. Geograficheskoe Obschestvo (Section of the Imperial Russian Geographical Society for Northwestern Russia).
- 223. Varshava (Warsaw)—Astronomicheskaia Observatoria (Astronomical Observatory).
  - 224. Imper. Warshawskij Universitet (The Imperial University).
  - 225. Mediko-Khirourgicheskaia Akademia (Medico-Chirurgical Academy).
  - 226. Obschestvo poöstshrenija khudoshestw w Zarstwe Polskom (Society for the Advancement of Fine Arts in Poland).
- 227. Yarosslaw—Demidowskij Juriditsheskij Lizej (The Juridical Lyceum of Demidoff).
  - 228. Obschestvo dlja issljedowanija Yarosslawskoj Gubernii w jesteswenno-istoritsheskom otnoshenii (Society for the Exploration of the Government of Yarosslaw with relation to Natural History).

# DE NEDERLANDEN (THE NETHERLANDS). (HOLLAND.)

- 229. Amsterdam (Noord-Holland)—Frederic Muller (Agent Smithsonian Institution).
  - 230. Genootschap ter Bevordering der Genees- en Heelkunde (Society for Promoting Medical and Chirurgical Science).
  - 231. Koninklijke Akademie van Wetenschappen (Royal Academy of Sciences).
  - 232. Koninklijk Zoologisch Genootschap "Natura Artis Magistra" (Royal Zoological Society).
  - 233. Maatschappij: Tot Bevordering der Bouwkunst (Society for the Encouragement of Architecture).
  - 234. Maatschappij: Tot Nut van't Algemeen (Society for the benefit of all Classes).

- 235. Rijks Akademie van Breldende Kunsten. (Royal Academy of Fine Arts.)
- 236. Stadsbibliotheek (City Library).
- 237. Vereeniging voor Statistiek in Nederland (Statistical Association of the Netherlands).
- Vereeniging voor Volksvlijt (Association for Popular Industry).
- 239. Wiskundig Genootschap: "Onvermoeide arbeid komt alles te boven" (Mathematical Society: "Untiring industry overcomes all").
- 240. Arnhem (Gelderland)—Natuurkundig Genootschap "Tot Nut en Vergenoegen" (Natural History Society: "Utility and Amusement").
  - 241. Openbare Bibliotheek (Public Library).
- 242. Breda (Noord-Brabant)-Koninklijke Militaire Akademie.
- 243. Deventer (Overifssel)—Openbare Bibliotheek (Public Library).
- 244. 'sGravenhage (The Hague) (Zuid-Holland)—Bureau voor Statistiek.
  - 245. Government of the Netherlands.
  - 246. Haagsch Genootschap tot Verdediging van den Christelijken Godsdienst (Hague Society for the Vindication of the Christian Religion).
  - 247. Koninklijke Bibliotheek (Royal Library).
  - Koninklijk Instituut van Ingenieurs (Royal Institute of Engineers).
  - 249. Koninklijk Instituut voor de Taal-, Land- en Volkenkunde van Nederlandsch Indië (Royal Institute for Philology, Geography, and Ethnography of Dutch India).
- 250. Groningen (Groningen)—Academia Groningana.
  - 251. Genootschap ter Bevordering der Natuurkundige Wetenschappen (Society for the Advancement of Natural Sciences).
  - 252. Genootschap pro excolendo Jure Patrio (Society for the Cultivation of National Jurisprudence).
  - 253. Institut voor Doofstommen (Institute for the Deaf and Dumb).
- Harlem (Noord Holland)—Bureau Scientifique Central Néerlandais à Harlem.

- 255. Hollandsche Maatschappij van Wetenschappen (Society of Sciences of Holland).
- 256. Nederlandsche Maatschappij ter Bevordering van Nijverheid (Society for the Promotion of Industry).
- 257. Stadsbibliotheek.
- 258. Teyler's Stichting.
- 259. 'sHertogenbosch (Noord-Brabant)—Provinciaal Genootschap van Kunsten en Wetenschappen in Noord-Brabant (Provincial Society of Arts and Sciences).
- Hoorn (Noord-Holland)—Societas Medico-Physica Hornana.
   Cercle Agricole et Horticole.
- 261a. Luxembourg (Luxembourg)—Institut Luxembourgeois.
- 262. Leeuwarden (Friesland) Friesch Genootschap voor Geschied- Oudheid- en Taalkunde (Friesland Society of History, Antiquity, and Philology).
- 263. Leiden (Zuid-Holland)—Academia Lugduno-Batava.
  - 264. Maatschappij van Nederlandsche Letterkunde (Society of Literature of the Netherlands).
  - 265. Nederlandsche Entomologische Vereeniging (Entomological Society of the Netherlands).
  - 266. Rijks Ethnographisch Museum (Royal Ethn. Museum).
  - 267. Rijks Museum van Natuurlijke Geschiedenis (National Museum of Natural History).
  - 269. Rijks Museum van Oudheden (National Museum of Antiquities).
  - 269. Rijks Observatorium (National Observatory).
  - 270. Rijks Herbarium (National Herbarium).
  - 271. Stolpiaansch Legaat (Stolp's Legacy).
  - 272. Vereeniging voor de Flora van Nederland (Association for the Flora of Holland).
- 273. Middelburg (Zeeland) Zeeuwsch Genootschap van Wetenschappen (Zeeland Society of Sciences).
  - 274. Provinciale Bibliotheek van Zeeland
- 275. Rotterdam (Zuid-Holland)—Bataarsch Genootschap van Proefondervindelijke Wijsbegeerte (Batavian Society of Experimental Philosophy)
  - Inrigting voor Doofstommen-Onderwijs (Institute for Deaf and Dumb).
  - 277. Nederlandsche Yacht-Club.

- 278. Schiedam (Zuid-Holland)—Natuurkundige Vereeniging Martinet. (Natural History Society: "Martinet.")
- 279. Utrecht (Utrecht)—Academia Rheno-Trajectina.
  - 280. Archiv für holländische Beiträge sur Natur- und Heil-
  - 281. Historisch Genootschap (Historical Society).
  - 282. Koninklijk Nederlandsch Meteorologisch Instituut (Royal Dutch Meteorological Institution).
  - 283. Observatorium.
  - 284. Provinciaal Utrechtsch Genootschap van Kunsten en Wetenschappen (Provincial Society of Arts and Sciences of Utrecht).
  - 285. Rijks Vecartenijschool.
  - 286. Utrechtsche Hoogeschool.
- 287. Zwolle (Overijssel)—Overijsselsche Vereeniging tot Ontwikkeling van Provinciale Welvaart (Overyssel Society for Promotion of Provincial Welfare).
  - 288. Vereeniging tot beoefening van Overijsselsch Regt en Geschiedenis (Society for the Cultivation of Overyssel Jurisprudence and History).
  - 289. Vriend van den Landman (Friend of the Agriculturist).

#### GERMANY, including AUSTRO-HUNGARY.

- 290. Allgemeiner Deutscher Apotheker-Verein.
- 291. Deutsche Ornithologen-Gesellschaft.
- 292. Verein der Süddeutschen Forstwirthe.
- 293. Versammlung Deutscher Land- und Forstwirthe.
- 294. Versammlung Deutscher Naturforscher und Aerste.
- 295. Aachen (Prussia)—Stadt-Bibliothek.
- 296. Agram (Hungary)—Handels und Gewerbekammer für Kroatien.
  - 297. K. K. Kroatisch-Slavonische Landwirthschafts-Gesellschaft.
  - 298. Gesellschaft für stidslav. Geschichte und Alterthümer.
  - 299. Naturhistorisches National-Museum.
  - 800. Redaction der Gospodarski List.
- 301. Allenburg (*Prussia*)—Gesammt-Verein des Deutsch. Ges. a Allerthums-Verein.

- 802. Altenburg (Saze-Altenburg)—Geschichts- und Alterthumsforschende Gesellschaft.
  - 803. Naturforschende Gesellschaft des Osterlandes.
  - 304. Pomologische Gesellschaft.
- 305. Altona (*Prussia*)—Königliche Sternwarte. 306. Thierschutz-Verein.
- Annaberg (Saxony)—Annaberg-Buchholzer Verein für Naturkunde.
- 308. Ansbach (Bavaria)—Historischer Verein in Mittelfranken.
- Arnstadt (Schwarzburg-Sondershausen)—Fürstliches Gymnasium.
- 310. Arolsen (Waldeck)—Landwirthschaftlicher Verein im Fürstenthum Waldeck.
- 311. Augsburg (Bavaria) Historischer Verein im Regierungs-Besirke Schwaben und Neuburg.
  - 312. Landwirthsch. Verein für Schwaben und Neuburg.
  - 313. Naturhistorischer Verein.
  - 314. Redaction des Auslandes.
  - Redaction der Wochenschrift für Thierheilkunde und Viehzucht.
- 816. Baireuth (Bavaria)—Historischer Verein für Oberfranken.317. Polytechnische Gesellschaft.
- 318. Bamberg (Bavaria)—Gewerbe-Verein.
  - 319. Königliche Bibliothek.
  - 320. Naturforschende Gesellschaft.
- 321. Bendorf bei Koblenz (*Prussia*) Deutsche Gesellschaft für Psychiatrie und gerichtliche Psychologie.
- 822. Berlin (*Prussia*)—Seine Majestät der Kaiser von Deutschland und König von Preussen.
  - 323. Akklimatisations-Verein in Berlin.
  - 824. Annales Botanices Systematica (Walpers).
  - 825. Berliner Aquarium (Dr. Brehm).
  - 826. Botanischer Verein für die Provinz Brandenburg, etc.
  - 827. Central Verein für das Wohl der arbeitenden Klassen.
  - 328. Deutsche Chemische Geschlschaft.
  - 329. Deutsche Geologische Gesellschaft.
  - 830. Deutsches Gewerbemuseum.
  - 831. Deutsche Shakespeare-Gesellschaft.

- 832. Deutscher Verein für Fabrication von Ziegeln, Thonwaaren und Cement.
  - 833. Entomologischer Verein.
- 834. General-Direction der Königlichen Museen. 835. Gesellschaft für Erdkunde.
- 836. Gesellschaft Naturforschender Freunde.
- 837. Gesellschaft für das Studium der neuern Sprachen.
- 838. Königliche Bibliothek.
- 339. Königliche Gewerbe-Akademie.
- 340. Königliches Ministerium des Innern.
- 841. Königliches Landes-Oekonomie-Collegium.
- 342. Königliches Landwirthschaftliches Museum. 343. Königliches Ministerium für Handel, Gewerbe, und
- öffentliche Arbeiten. 344. Königliches Ministerium für landwirthschaftl. Angele-
- genheiten. 845. Königlich Preussische Akademie der Wissenschaften.
- 346. Königlich Preussischer Generalstab der Armee.
- 347. Königlich Preussische Kriegs-Akademie. 348. Königl. Preuss. Statistisches Bureau
- 349. Königlich Preussische Technische Bau-Deputation.
- 850. Königlich Preussische vereinigte Artillerie- und Ingenieur-Schule.
- 351. Königl. Universitäts-Bibliothek.
- 352. Königl. Universitäte-Sternwarte.

357. Preuss. Haupt-Bibelgesellschaft.

- 353. Medicinische Gesellschaft.
- 854. Meteorologisches Institut.
- 355. Physikalische Gesellschaft.
- 356. Polytechnische Gesellschaft.
- 358. Redaction des Archivs für path. Anatomie.
- 359. Redaction der Jahrbücher für die Deutsche Armee und Marine.
- 360. Redaction des Jahrbuches für wiss. Botanik.
- 361. Redaction des Journals für Ornithologie.
- 362. Redaction des Landwirthschaftlichen Centralblattes für Deutschland.
- 363. Redaction der Linnsea.
- 864. Redaction des Magazins für die Literatur des Auslandes-
- 365. Redaction des Nautischen Jahrbuchs (Dr. C. Bremiker)

- 366. Redaction des Statistischen Central-Archivs (Dr. O. Hübner).
- 367. Redaction der Zeitschrift für Ethnologie (A. Bastian and R. Hartmann).
- 368. Stenographischer Verein.
- 369. Thierschutz-Verein.

١

- 370. Verein Deutscher Ingenieure.
- 371. Verein für Eisenbahnkunde.
- 372. Verein für Geschichte der Mark BranJenburg.
- Verein zur Beförderung des Gartenbaues in den Königl.
   Preuss. Staaten.
- 374. Verein zur Beförderung des Gewerbefleisses in Preussen.
- 375. Zoologischer Garten.
- 376. Zoologisches Museum der Königl. Universität.
- 377. Bernburg (Anhalt)-Norddeutscher Apotheker-Verein.
- 378. Bilk (bei Düsseldorf) (Prussia)—Sternwarte.
- Blankenburg (Brunswick) Naturwissenschaftlicher Verein des Harzes.
- Bonn (Prussia)—Landwirthschaftlicher Central-Verein für Rheinpreussen.
  - Naturhistorischer Verein der preussischen Rheinlande und Westphalens.
  - 382. Niederrheinische Gesellschaft für Natur- u. Heilkunde.
  - 383. Redaction des Archivs für die gesammte Physiologie des Menschen und der Thiere.
  - 384. Redaction des Wiegmann'schen Archivs für Naturgeschichte. (Prof. Troschel.)
  - 385. Universitäts-Bibliothek.
  - 386. Universitäts-Sternwarte.
  - 887. Verein von Alterthumsfreunden im Rheinlande
- 888. Braunschweig (Brunswick)—F. Vieweg und Sohn.
  - 389. Garten-Verein im Herzogthum Braunschweig.
  - 390. Stadt-Bibliothek.
- 891. Bregenz (Austria)—Vorarlberger Museums-Verein.
- 892. Bremen (Hanse-Town)—Bibliothek des Museums.
  - 393. Bremer Regierung.
  - 394. Bureau für Bremische Statistik.
  - 895. Comité der Nordpolar-Expedition.
  - 396. Gartenbau-Verein für Bremen.

- 897. Handels-Kammer.
  - 898. Künstler-Verein für Bremische Geschichts-und Alterthumskunde.
  - 399. Landwirthschafts-Verein.
  - 400. Naturwissenschaftlicher Verein.
  - 401. Observatorium der Navigations-Schule.
- 402. Stadt-Bibliothek. 403. Breslau (Prussia)—Blinden-Anstalt.
  - 404. Königl. Preussisches Ober Berg-Amt.
  - 405. Landwirthschaftlicher Central-Verein für Schlesien. 406. Physiologisches Institut.
  - 407. Schlesische Blinden-Unterrichts-Anstalt.
  - 408. Schlesischer-Central-Gewerbe-Verein.
  - 409. Schlesische Gesellschaft für vaterländische Cultur.
  - 409. Universitäts-Bibliothek.
  - 410. Universitäts-Sternwarte.
  - 411. Verein für schlesische Insektenkunde.
- 412. Bromberg (Prussia)—Landwirthschaftlicher Central-Verein für den Netze-District.
- 413. Brünn (Austria)—K. K. Mährisch-schlesische Gesellschaft für Ackerbau- Natur- und Landeskunde.
  - 414. Mährisch-schlesisches Blinden-Erziehungs-Institut.
  - 415. Naturforschender Verein.
- 416. Buda (Hungary). See Ofen.

417. Cassel. See Kassel.

- 418. Chemnitz (Saxony)—K. Gewerbschule.
  - 419. Naturwissenschaftliche Gesellschaft.
  - 420. Oeffentliche Handels-Lehranstalt.
  - 421. Redaction der Deutschen Industrie-Zeitung.
- 422. Celle (Prussia)—Kön. Landwirthschafts-Gesellschaft.
- 423. Clempenow bei Anglam (Prussia). See Eldena.
- 424. Coblenz. See Koblenz.
- 425. Colmar—(Alsace) Société d'Histoire Naturelle de Colmar.
- 426. Cracau. See Krakau.
- 427. Czernowitz (Austria)—Verein für Landeskultur und Landeskunde im Herzogthume Bukowina.
- 428. Danzig (Prussia)—Hauptverein west-preussischer Landwirthe.
  - 429. Naturforschende Gesellschaft.
  - 430. Sternwarte.

- 431. Darmstadt (Hesse)—Gartenbau-Verein.
  - 432. Grossherzogliche Central-Stelle für Gewerbe und Handel.
  - 433. Grossherzoglich Hessische Central-Stelle für die Landes-Statistik.
  - 434. Grossherz. Hessischer Gewerbe-Verein.
  - 435. Grossherzogliche Hof-Bibliothek.
  - 436. Grossherzogliches Museum.
  - 437. Grossherz. Polytechnische Schule.
  - 438. Mittelrheinisch-geologischer Verein.
    439. Verein für Erdkunde u. verwandte Wissenschaften.
- 440. Deidesheim (Bavaria) Pollichia: Naturwissenschaftlicher Verein der Rheinpfals.
- 441. Dessau (Anhalt)-Naturhistorischer Verein.
- 441a. Donaueschingen (Baden)—Vorein für Geschichte und Naturgeschichte in Donaueschingen.
- 442. Dresden (Saxony)-Seine Majestät der König von Sachsen.
  - 443 Flora: Gesellschaft für Botanik und Gartenbau.
  - 444. Gesellschaft für Botanik und Zoologie
  - 445. Gesellschaft für Natur- und Heilkunde.
  - 446. Gewerbe-Verein.
  - 447. Naturwissenschaftliche Gesellschaft "Isis."
  - Neue Jahrb. für Mineralogie, Geologie, und Palaeontologie (Dr. Geinitz).
  - 449. Kaiserliche Leopoldino Caorlinische Deutsche Akademie der Naturforscher.
  - 450. Königliche Landes- Blinden-Anstalt.
  - 451. Königliche Offentliche Bibliothek.
  - 452. Königliche Polytechnische Schule.
  - 453. Königliches Mineralogisches Museum.
  - 454. K. Sächsische Oekonomische Gesellschaft.
  - 455 Königl. Sächs. Verein für Erforschung und Erhaltung vaterländischer Alterthümer.
  - 456. Ministerium des Königlichen Hauses.
  - 457. Offentliche Handels-Lehranstalt.
  - 458. Photographische Gesellschaft.
  - 459. Sächsischer Ingenieur-Verein.
  - 460. Statistisches Bureau. 461. Thierschutz-Verein.
  - 462. Verein für Erdkunde.
- 463. Dürckheim ( )—Pollichia, Naturwissenschaftl. Verein der Rheinpfalz.

- 464. Eisenach (Saxe-Weimar)—Grossherz. Carl Friedrichs-Gymnssium.
  - 465. Real-Gymnasium.
- 466. Elberfeld (*Prussia*)—Bergischer Geschichts-Verein.
  - 467. Naturwissenschaftlicher Verein von El berfeld u. Barmen.
- 468. Eldena bei Greifswald (Prussia)—Baltischer Verein zur Beförderung der Landwirthschaft.
  - 469. Gartenbau-Verein für Neuvorpommern und Rügen. 470. K. P. Staats- und landwirthschaftl. Akademie Eldena.
- 471. Emden (Prussia)-Gesellschaft für bildende Kunst und vater
  - ländische Alterthümer
    - 472. Naturforschende Gesellschaft.
      473. Taubstummen-Anstalt.
- 471. Ems (Prussia)—Redaction der Balneologischen Zeitung.
- 475. Erfurt (Prussia)—Akademie Gemeinnütziger Wissenschaften.
  - 476. Gartenbau-Verein. 477. Gewerbe-Verein.
- 478. Erlangen (Bavaria)-Universitäts-Bibliothek.
  - 479. Physikalisch-Medicinische Gesellschaft.
- 480. Fiume (Austria)—K. K. Marine-Akademie.
- 481. Frankfurt am Main (Prussia) Deutsche Malakozoologische Gesellschaft
  - 482. Gartenbaugesellschaft- "Flora."
  - 483. Senckenbergische naturforschende Gesellschaft.
- 484. Zoologische Gesellschaft.
  485. Frankfurt-an-der-Oder (*Prussia*) Historisch-Statistischer Verein.
- 486. Freiberg (Saxony)—Freiberger Alterthums-Verein.
- 487. Königlich Sächsische Bergakademie.
- 488. Freiburg (Baden)—Gesellschaft für Beförderung der Naturwissenschaften.
  - 489. Grossherz. Blinden-Anstalt.
  - 490. Redaction des Archivs für Anthropologie (Dr. A. Ecker).
  - 491. Universitäts-Bibliothek.
- 492. Friedberg (Hesse)—Blinden-Anstalt.
- 494. Fürth (Bavaria)-Gewerbe-Verein der Stadt Fürth.

- 495. Gera (Fürstenth. Reuss) Gesellschaft der Freunde der Naturwissenschaften.
- 496. Giessen (Hesse)—Historischer Verein.
  - 497. Oberhessische Gesellschaft für Natur- und Heilkunde.
  - 498. Universitäts-Bibliothek. 499. Zoologisches Museum.
- 500. Gortz (Austria)-K. K. Ackerbau Geschlschaft.
- 501. Görlitz (Prussia)-Gartenbau-Verein.
  - 502. Gewerbe-Verein.
    - 503. Naturforschende Gesellschaft.
    - 504. Oberlausitzer Gesellschaft der Wissenschaften.
    - 505. Verein für Geflügelzucht.
    - 506. Verein für Hühnerzucht.
- 507. Gotha (Saxe-Koburg-Gotha)—Geographische Anstalt.
  - 508. Herz. Bibliothek der Friedenstein'schen Sammlungen.
  - 509. Sternwarte.510. Thüringer Gartenbau-Verein.
- 511. Göttingen (Prussia) Königliche Gesellschaft der Wissenschaften.
  - 512. Königliche Sternwarte.
  - 513. Redaction des Journals für Landwirthschaft.
  - 514. Universitäts-Bibliothek.
  - 515. Zoologisches Museum.
- 516. Graz (Austria)—Akademie für Handel und Industrie.
  - 517. Geognostisch-Montanistischer Verein für Steiermark.
  - 518. Historischer Verein für Steiermark.
  - 519. K. K. Erstes Staats Gymnasium.
  - 520. K. K. Steiermärkische Landwirthschafts-Gesellschaft.
  - 521. Naturwissenschaftlicher Verein für Steiermark.
  - 522. Steiermärkischer Industrie- und Gewerbe- Verein.
  - 523. Steiermärkische Landes-Ober-Realschule.
  - 524. Steiermärkisches Landschaftliches Joanneum.
  - 525. Verein der Aerzte in Steiermark.
- 526. Greifswald (*Prussia*)—Gesellschaft für Pommers. Geschichte und Alterthumskunde.
  - 527. Universitäts-Bibliothek.
- 528. Güstrow (Mecklenburg) Verein der Freunde der Naturgeschichte in Mecklenburg.

- 529. Gumbinnen (Prussia)—Landwirthschaftlicher Central-Verein für Littauen und Masuren.
- 530. Hall (Austria)—Verein zur Geologischen Durchforschung Tirols und Vorarlbergs.
- 531. Halle a. d. Saale (Prussia)—Königliches Ober-Berg-Amt.
  - 532. Landwirthschaftlicher Central-Verein für die Provins Sachsen.
  - 533. Naturforschende Gesellschaft.
  - 534. Naturwissenschaftlicher Verein für Sachsen und Thüringen.
  - 535. Norddeutscher Apotheker Verein.
  - 536. Redaction der Botsnischen Zeitung.
  - 537. Redaction der Natur (Dr. Otto Ule).
  - 538. Thüringisch-Sächsischer Geschichts- und Alterthums-Verein.
  - 539. Universitäts-Bibliothek.
- 540. Hamburg (Hanse-Town)—Blinden-Anstalt.
  - 541. Commerz-Bibliothek.
  - 542. Handels- Kammer.
  - 543. Johanneum.
  - 544. Naturwissenschaftlicher Verein.
  - 545. Norddeutsche Seewarte.
  - 546. Stadt-Bibliothek.
  - 547. Sternwarte.
  - 548. Thierschutz-Verein.
  - 549. Verein für Hamburgische Geschichte.
  - 550. Verein für Handelsfreiheit.
  - 551. Zoologische Gesellschaft.
- 552. Hamm (Prussia)—Königliches Gymnasium.
- 553. Hanau (Prussia) Wetterauer Gesellschaft für die gesammte Naturkunde.
- 554. Hannover (Prussia)—Architecten- und Ingenieur-Verein.
  - 555. Gesammt Verein der Deutschen Geschichts und Alterthums Verein.
  - 556. Gewerbe-Verein für die Provinz Hannover.
  - 557. Historischer Verein für Niedersachsen.
  - 558. Königliche Oeffentliche Bibliothek.
  - 559. Königliche Polytechnische Schule.
  - 560. Naturhistorische Gesellschaft.
- 561. Heidelberg (Baden)—Landwirthschaftlicher Bezirks-Verein.

- 562. Naturhistorisch-medicinischer Verein.
- 563. Süddeutscher Apotheker-Verein.
- 564. Universitäts-Bibliothek.
- 565. **Hermannstadt** (*Hungary*)—Siebenbürgischer Verein für Naturwissenschaften.
  - 566. Verein für Siebenbürgische Landeskunde.
- 567. Hohenheim (Würtemberg)—Kön. Wür. Land- und Forstwirthschaftliche Akademie.
- 568. **Hohenleuben** (Saxony)—Voigtländischer Alterthumsforschender Verein.
- 569. Innsbruck (Austria)—Ferdinandeum.
  - 570. K. K. Landwirthschafts-Gesellschaft für Tirol und Vorarlberg.
  - 571. Naturwissenschaftlich medinischer Verein.
  - 572. Universitäts-Bibliothek.
- 573. Jauer (*Prussia*)—Oekonomisch-patriotische Gesellschaft für das Fürstenthum Schweidnitz und Jauer.
- 574. Jena (Saxe-Weimar)-Landwirthschaftliches Institut.
  - 575. Medicinisch-naturwissenschaftliche Gesellschaft.
  - 576. Pharmaceutisch-naturwissenschaftlicher Verein.
  - 577. Redaction der Zeitschrift für Deutsche Landwirthe.
    578. Statistisches Bureau der Vereinigten Thüringisches
  - 578. Statistisches Bureau der Vereinigten Thüringischen Staaten.
  - 579. Universitäts-Bibliothek.
  - 580. Verein für Thüringische Geschichts und Alterthumskunde.
- 581. Karlsruhe (Baden)-Badischer Alterthums-Verein.
  - 582. Centralstelle für die Landwirthschaft.
  - 583. Gewerbe-Verein.
  - 584. Grossherz. Badisches Polytechnische Schule.
  - 585. Grossherzogliche Badische Regierung.
  - 586. Grosshers. Badisches Statistisches Bureau des Handels-Ministeriums.
  - 587. Grossherzogliche Hofbibliothek. 588. Naturwissenschaftlicher Verein.
- 589. Kassel (Prussia)-Kurhessische Landes-Bibliothek.
  - 590. Landwirthschaftlicher Central-Verein.
    - 591. Malacozoologische Blätter.
    - 592. Verein für Hessische Geschichte und Landeskunde.

- 593. Verein für Naturkunde.
- 594. Kiel (Prussia)-Blinden-Anstalt.
  - 595. Gesellschuft für die Sammlung und Erhaltung vaterl.
    Alterthümer.
  - 596. Redaction der Schul-Zeitung.
  - 597. S. H. L. Gesellschaft für vaterländische Geschichte. 598. Schleswig-Hohlsteinscher Landwirthschaftlicher Gene-
  - ralverein.
    599. Universitäts-Bibliothek.
  - 600. Verein für Geographie und Naturwissenschaften.
  - 601. Verein nördlich der Elbe für Verbreitung naturwissenschaftlicher Kenntnisse.
- 602. Klagenfurt (Austria)—Geschichts-Verein für Kärnten.
  - 603. Handels- und Gewerbekammer.
    - 604. Kärnterischer (alter) Seidenbau-Verein.
    - 605. Kärntnerischer Industrie- u. Gewerbe-Verein. 606. K. K. Landwirthschafts-Gesellschaft.
    - 607. Naturhistorisches Museum.
- 608. Klausenburg (Hungary)—Erdélyi Muzeum-Egylet. 609. Klausthal (Prussia)—Naturwissensch. Verein "Maja."
- 610. Koblenz (Prussia)—Naturhistorischer Verein.
  611. Koburg (Saxe-Koburg-Gotha)—Verein für Naturkunde im Her-
- 611. Koburg (Saxe-Koburg-Gotha)—Verein für Naturkunde im Herzogthum Sachsen-Koburg.
- 612. Köln (Prussia)—Historischer Verein für den Niederrhein.
  613. Königsberg (Prussia)—Ostpreussische Landwirthschaftliche
  - Centralstelle.
    - 614. Ostpreussische Physikalisch-ökonomische Gesellschaft.615. Preuss. Provinzial-Verein für Blinden-Unterricht.
    - 616. Universitäts-Bibliothek. 617. Universitäts Sternwarte.
- 618. Kórnik (near Posen, Prussia)—Biblioteka Kórnicka 619. Universitäts-Sternwarte.
- 620. Krakau (Austria)—C. K. Towarzystwo Naukowe Krakowskie. 621. K. K. Sternwarte.
- 622. Kremsmünster (Austria)—Sternwarte.
- 623. Laibach (Austria)—Historischer Verein für Krain.
  - 624. Juristische Gesellschaft.
  - 625. K. K. Landwirthschafts-Gesellschaft 626. Landes-Museum.
  - 627. Slovenischer Literatur-Verein.

- 628. Landshut (Bavaria)—Historischer Verein für Niederbaiern.
- 629. Leipzig (Saxony)—Dr. Felix Flügel (Agent Smithsonian Institution).
  - 630. Astronomische Gesellschaft.
  - 631. Deutsches Central-Museum für Völkerkunde.
  - 632. Deutsche Morgenländische Gesellschaft.
  - 633. F. A. Brockhaus' Verlagsbuchhandlung.
  - 634. Fürstlich Jablonowski'sche Gesellschaft.
  - 635. Handels kammer.
  - 636. Königlich Sächsische Gesellschaft der Wissenschaften.
  - 637. Landwirthschaftlicher Kreisverein.
  - 638. Medicinische Gesellschaft.
  - 639. Oeffentliche Handels-Lehranstalt.
  - 640. Polytechnische Gesellschaft.
  - 641. Redaction des Archivs für Anatomie, Physiologie und wissenschaftliche Medicin (Veit & Co.).
  - 642. Redaction der Jahrbücher für wissenschaftliche Botanik
  - Redaction der Zeitschrift für wissenschaftliche Zoologie.
  - 644. Redaction des Deutschen Archivs für Klinische Medecin.
  - 645. Stadt-Bibliothek.
  - 646. Städtische Realschule.
  - 647. Statistisches Bureau.
  - 648. Taubstummen-Anstalt.
  - 649. Universitäts-Bibliothek.
  - 650. Universitäts-Sternwarte.
  - 651. Verein Deutscher Eisenbahn-Verwaltungen.
  - 652. Verein von Freunden der Erdkunde.
- 653. Lemberg (Austria)—Biblioteka Zakladu Ossolinskich.
- 654. Leisnig (Saxony)—Geschichts- und Alterthumsforschender Verein.
- 655. Liegnitz (Prussia)—Landwirthschaftlicher Verein.
- 656. Linz (Austria)—Handels- und Gewerbekammer Oberösterreichs.
  - 657. K. K. Landwirthschafts-Gesellschaft.
  - 658. Museum Francisco-Carolinum.
- 659. Lübeck (Hanse-Town)—Geschellschaft zur Beförderung gemeinnütziger Thätigkeit.
  - 660. Museum für Kunst und Natur.

- 661. Stadt-Bibliothek.
- 662. Verein für lübeckische Geschichte.
- 663. Lüneburg (*Prussia*)—Alterthums-Verein. 664. Naturwissenschaftlicher Verein.
- 666. Mainz (Hesse)—Grossherzogliche Handels-Kammer.
  - 667. Rheinische Naturforschende Gesellschaft.
  - 668. Verein zur Erforschung der Rheinischen Geschichte und Alterthümer.
- 669. Mannheim (Baden)—Sternwarte.
  - 670. Verein für Naturkunde.
- 671. Marburg (*Prussia*)—Gesellschaft zur Beförderung der gesammten Naturwissenschaften.
  - 672. Sternwarte.
  - 673. Universitäts-Bibliothek.
- 674. Meersburg (Baden) Grosshers. Badische allgem. Taubstummen-Anstalt.
- 675. Meiningen (Saxe-Meiningen)—Hennebergischer Alterthumsforschender Verein.
  - 676. Verein für Pomologie und Gartenbau.
- 677. Meissen (Saxony)—Gesellschaft "Isis."
- 678. Metz (Lorraine)—Académie Impériale de Metz.
  - 679. Société d'Histoire Naturelle du Département de la Moselle.
  - 680. Sociéte des Sciences Médicales.
- 681. Mühlhausen (Alsace)—Société Industrielle.
- 682. Munchen: Munich (Bavaria)—Baierische Gartenbau-Gesellschaft.
  - 683. Geographische Gesellschaft.
  - 684. Historischer Verein für Oberbaiern.
  - 685. Königl. Baierische Akademie der Wissenschaften.
  - 686. Königl. Botanischer Garten.
  - 687. Königl. General-Quartiermeister-Stab.
  - 688. Königl. Hof- und Staats-Bibliothek.
  - 689. Königl. Staats-Ministerium.
  - 690. Königl. Statistisches Bureau.
  - 691. Königl. Sternwarte.
  - 692. Königl. Taubstummen-Anstalt.
  - 693. Landwirthschaftlicher Verein.
  - 694. Ministerium des öffentlichen Unterrichts.

- 695. Polytechnischer Verein.
- 696. Redaction der Zeitschrift für Biologie.
- 697. Universitäts-Bibliothek.
- 698. Münster (*Prussia*)—Landwirthschaftlicher Provincial-Verein für Westphalen und Lippe.
  - 699. Sternwarte.
  - 700. Verein für Geschichte und Alterthümer Westphalens.
- 701. Neisse (Prussia)—Katholisches Gymnasium.
  - 702. Philomathische Gesellschaft.
  - 703. Realschule.
- 704. Neu Titschin (Austria)—Landwirthschaftlicher Verein.
- 705. Nordhausen (Prussia)—Wissenschaftlicher Verein.
- 706. Nürnberg (Bavaria)—Central-Verein Deutscher Zahnärzte.
  - 707. Germanisches Museum.
  - 708. Gewerbe-Verein.
  - 709. Naturhistorische Gesellschaft.
- 710. Ofen (Buda, Hungary)-K. K. Ober-Realschule.
  - 7.11. K. K. Sternwarte.
  - 712. Societät der Naturalisten.
- 713. Offenbach (*Prussia*)—Grossherzogliche Handels-Kammer. 714. Verein für Naturkunde.
- 715. Oldenburg (Oldenburg)—Grossherzogliche Bibliothek.
- 716. Olmütz (Austria)—K. K. Deutsches Gymnasium.
  - 717. K. K. Ober-Realschule.
  - 718 K. K. Studien-Bibliothek.
- 719. Osnabrück (Hannover)—Historicher Verein.
- 720. Passau (Bavaria)—Naturhistorischer Verein.
  - 721. Praktische Gartenbau-Gesellschaft in Baiern.
- 722. Pesth (Hungary)—A Magyar Tudományos Akademia.
  - 723. Geologische Gesellschaft für Ungarn.
  - 724. Handels-Akademie.
  - 725. Királyi Magyar Természettudományi Társulat (Royal Hungarian Society of Natural Science).
  - 726. K. K. Obergymnasium.
  - 727. K. K. Sternwarte.
  - 728. Maygar Királyi Tudomány Egyetem (Royal Hungarian University).
  - 729. Maygar Nemzeti Museum.
  - 730. Pestváros Statisztikai Hivatala (Statistical Bureau).

- 731. Plauen (Saxony)—Gymnasium und Realschule.
- 732. Verein für Natur- und Heilkunde.
- 733. Pola (Austria)—K. K. Hydrographisches Depot.
- 734. **Posen** (*Prussia*)—Naturwissenschaftlicher Verein. 735. Städtische Realschule.
- 736. Potsdam (*Prussia*) Landwirthschaftlicher Provinzial-Verein für die Mark Brandenburg und Niederlausitz.
  - 737. Verein zur Beförderung des Seidenbaues in der Mark Brandenburg u. der Niederlausitz.
- 738. Prag (Austria)—Böhmischer Gewerbe-Verein.

742. K. K. Sternwarte.

men.

- 739. Königlich Böhmische Gesellschaft der Wissenschaften.
  - 740. Königlich Böhmisches Museum.
  - 741. K. K. Patriotisch-ökonomische Gesellschaft.
  - 743. Medicinische Facultat.
  - 744. Naturhistorischer Verein "Lotos."
  - 745. Schafzüchter-Verein für Böhmen.
  - 746. Universitäts-Bibliothek.
  - 747. Verein für Geschichte der Deutschen in Böhmen.748. Verein zur Ermunterung des Gewerbsgeistes in Böh-
- 749. **Premslaff** (bei **Labes**) (*Prussia*)—Pommersche Oekonomische Gesellschaft.
- 750. Pressburg (Hungary)-Verein für Naturkunde.
- 751. Verein für Natur- und Heilkunde.
- 752. Ravensburg (Würtemberg)—Red. der Illustrirten Monatshefte für Obst- und Weinbau.
- 753. Regensburg (Bavaria)—Historischer Verein für die Ober-Pfalz.
  - 754. K. Baierischer Apotheker-Verein.
  - 755. K. Buierische Botanische Gesellschaft.756. Zoologisch-Mineralogischer Verein.
- 757. Reichenbach (Saxony)—Voigtland. Verein für Naturkunde.
- 101. Itological (Sacony) Volgitalia. Volcin Tut Maturatura.
- 758. Reutlingen (Würtemberg)—Pomologisches Institut.
  759. Rostock (Mecklenburg)—Mecklenburgischer Patriotisc
- 759. Rostock (Mecklenburg)—Mecklenburgischer Patriotischer Verein.
  - 760. Universitäts-Bibliothek.
- 761. Roveredo (Austria) Accademia di Lettere e Scienze degli Agiati.
- 762. St. Polten (Austria)—Nieder.-Oesterr. Landes-Ober-Realschule.

- 763. Salzburg (Austria)—K. K. Landwirthschafts-Gesellschaft.
  764. Städtisches Museum Carolino-Augusteum.
- 765. Schärzburg (Austria)—Gymnasium.
- 766. Schwerin (Mecklenburg-Schwerin)—Grossherz. Landes- Vermessungs-Commission.
  - 767. Grossherzogliches Statistisches Bureau.
  - 768. Regierungs-Bibliothek.
  - 769. Verein für Mecklenburgische Geschichte und Alterthumskunde.
- 770. Sigmaringen (*Prussia*)—Landwirthschaftliche Centralstelle des Vereins zur Beförderung der Landwirthschaft und der Gewerbe für die Hohenzollernschen Lande.
- 771. Sondershausen (Schwarzburg Sondershausen) Fürstliche Real Schule.
  - 772. Fürstlich Schwarzburgisches Gymnasium.
  - 773. Verein zur Beförderung der Landwirthschaft.
- 774. Speier (Bavaria)—Historischer Verein für Rheinbaiern.
   775. Sternwarte des Königl. Lyceums in Speier.
- 776. Stade (*Prussia*)—Verein für Geschichte und Alterthümer der Herzogthümer Bremen and Verden.
- 777. Stettin (Prussia)—Entomologischer Verein.
  - 778. Gesellschaft für pommersche Geschichte und Alterthumskunde.
- 779. Strassburg (Alsace)—Société pour la Conservation des Monuments historiques d'Alsace.
  - 780. Société des Sciences, Agriculture et Arts du Bas-Rhin.
  - 781. Société des Sciences Naturelles de Strasbourg.
- 782. Stuttgart (Würtemberg)—Seine Majestät der König von Würtemberg.
  - 783. Gartenbau-Gesellschaft "Flora."
  - 784. Gesellschaft für die Weinverbesserung in Würtemberg.
  - 785. Gewerbe-Verein.
  - 786. Heilgymnastisches Institut. (Dr. Roth.)
  - 787. K. Centralstelle für Gewerbe und Handel.
  - 788. K. Centralstelle für die Landwirthschaft.
  - 789. K. Oeffentliche Bibliothek.
  - 790. K. Statistisch-topographisches Bureau.
  - 791. Königliches Staats Archiv.

- 792. Verein für Vaterländ. Naturkunde in Würtemberg.
- 793. Verein zur Fürsorge für entlassene Strafgefangene.
- 794. Würtembergischer Alterthums-Verein.
- 795. Würtembergischer Arterthums-verein.
- 796. **Tettnang** (Würtemberg)—Verein für Geschichte des Bodensees und seiner Umgebung.
- 797. Trier (Prussia)-Gesellschaft für nützliche Forschungen.
- 798. Trieste (Austria)—Civico Museo Ferdinando-Massimiliano.
  - 799. Gartenbau-Gesellschaft des Litorales.
  - 800. K. K. Nautische Akademie (Director, H. Littrow). 801. Società Scientifico Letteraria della Minerva.
- 802. Tübingen (Würtemberg)—K. Universitäts-Bibliothek. 803. Landwirthschaftlicher Verein.
- Würtemberg)—Naturwissenschaftliche Gesellschaft.
   805. Verein für Kunst und Alterthum in Oberschwaben.
- 806. Waren (Mecklenburg) Von Maltzausches Naturhistorisches Museum.
- 807. Weiheustephan (Bavaria)—Landwirthsch. Central-Schule.
- 808. Weilburg (Prussia)—Verein Nassauischer Aerzte.
- Weimar (Saxe-Weimar)—Geographisches Institut.
   Verein für Blumistik und Gartenbau.
- 811. Weinsberg (Würtemberg)—Historischer Verein für das Würtembergische Franken.
- 812. Wernigerode (*Prussia*) Harz-Verein für Geschichte und Alterthumskunde.
- 813. Wien (Vienna) (Austria)—Seine Kaiserlich-Königliche Majestät der Kaiser von Oesterreich Ungarn.
  - 814. Anthropologische Gesellschaft.
  - 815. Handels- und Gewerbekammer.
  - ,816. Hydrographische Anstalt der Kais. Oesterr. Marine.
  - 817. Kaiserliche Akademie der Wissenschaften.
  - K. K. Central-Anstalt f
     ür Meteorologie u. Erd-Magnetismus.
  - 819. K. K. Gartenbau-Gesellschaft.
  - 820. K. K. Geographische Gesellschaft.
  - 821. K. K. Geologische Reichsanstalt.
  - 822. K. K. Handels-Ministerium.
  - 823. K. K. Hofbibliothek.
  - 824 K. K. Hof- Mineralien-Kabinet.

- 825. K. K. Hof- und Staatsdruckerei.
- 826. K. K. Landwirthschafts-Gesellschaft.
- 827. K. K. Marine Ober-Commando.
- 828. K. K. Ministerium für Cultur und Unterricht.
- 829. K. K. Ministerium des Innern.
- 830. K. K. Naturalien-Kabinet.
- 831. K. K. Ober-Gymnasium zu den Schotten.
- 832. K. K. Oesterr. Museum für Kunst und Industrie.
- 833. K. K. Schottenfelder Ober-Realschule.
- 834. K. K. Statistische Central-Commission.
- 835. K. K. Sternwarte.
- 836. K. K. Zoologisch-Botanische Gesellschaft.
- 837. Marine-Section des Kriegs-Ministeriums.
- 838. Niederösterreichischer Gewerbe-Verein.
- 839. Oesterr. Gesellschaft für Meteorologie.
- 840. Oesterr. Ingenieur- und Architecten-Verein.
- 841. Photographische Gesellschaft.
- 842. Polytechnische Gesellschaft.
- 843. Redaction der Osterreichischen Zeitschrift für praktische Heilkunde.
- 844. Redaction der Wiener numismatischen Monatshefte.
- 845. Universitäts-Bibliothek.
- 846. Verein zur Verbreitung naturwissenschaftlicher Kenntnisse.
- 847. Verein zur Versorgung und Beschäftigung erwachsener Blinden.
- 848. Wiener Thierschutz-Verein.
- 849. Wiesbaden (Prussia)—Gewerbe-Verein für das Herzogthum Nassau.
  - Verein für Nassauische Geschichte u. Alterthumskunde.
  - 851. Verein für Naturkunde.
  - 852. Verein Nassauischer Land- und Forstwirthe.
- 853. Worms (Hesse)—Grossherz. Gymnasium.
  - 854. Grossherz. Hess. Handels-Kammer.
- 855. Würzburg (Bavaria)—Deutsche Gesellschaft für Anthropologie, Ethnologie und Urgeschichte.
  - 856. Historischer Verein von Unterfranken und Aschaffenburg.
  - 857. Physikalisch-Medicinische Gesellschaft.

- 858. Polytechnischer Central-Verein.
- 859. Redaction der Jahresberichte der Physiologie.
- 860. Universitäts-Bibliothek.
- 861. Zara (Austria)—Società Economica di Dalmazia.
- 862. Zweibrücken (Bavaria)-Naturhistorischer Verein.

# SWITZERLAND.

- 863. Allgemeine Schweizerische Gesellschaft für die gesammten Natur wissenschaften. (Bern.)
  - 864. Schweizerischer Alpenclub. (Bern.)
  - 865. Schweizerischer Apotheker-Verein. (Bern.)866. Schweizerische Entomologische Gesellschaft. (Bern.)
  - 867. Schweizerische Gemeinnützige Gesellschaft. (Bern.)
  - 868. Schweizerische Historische Gesellschaft. (Bern.)
  - 869. Schweizerischer Lehrverein. (Bern.)
  - 870. Verein Schweizerischer Gymnasiallehrer. (Bern.)
- 871. Aarau—Aargauische Naturforschende Gesellschaft.
  - 872. Blinden und Taubstummen Institut.
- 873. Basel-Gesellschaft für vaterländische Alterthümer.
  - Gesellschaft zur Beförderung des Guten und Gemeinnützigen.
  - 875. Gewerbe-Schule.
  - 876. Naturforschende Gesellschaft. 877. Société des Sciences.
  - 878. Universitäts-Bibliothek.
- 879. Bern—Conseil Fédéral Suisse.
- 880. Eidgenössiches Statistisches Bureau.
  - 881. Kantons-Schule.
  - 882. Naturforschende Gesellschaft.
  - 883. Oekonomische Gesellschaft des Kantons Bern.
  - 884. Société des Sciences.
  - 885. Sternwarte.
  - 886. Universitäts-Bibliothek.
- 887. Chur-Naturforschende Gesellschaft Graubündens.
- 888. Fribourg-Société d'Histoire du Canton du Fribourg.
- 889. Genève-Archives des Sciences Physiques et Naturelles.
  - 890. Association Zoologique du Léman.
    - 891. Bibliothèque de la Ville.
    - 892. Institute National Genevois.
    - 692. Institute National Genevole
    - 893. Observatoire.

38

## BELGIUM.

- 894. Société des Arts de Genève.
- 895. Société Genevoise d'Utilité Publique.
- 896. Société d'Histoire et d'Archéologie de Genève.
- 897. Société de Géographie.
- 898. Société de Physique et d'Histoire Naturelle.
- 899. Société Médicale.
- 900. Société Ornithologique Suisse.
- 901. Lausanne-Asile des Aveugles de Lausanne.
  - 902. Bibliothèque Cantonale Vaudoise.
  - 903. Société d'Agriculture de la Suisse Romande.
  - 904. Société d'Histoire de la Suisse Romande.
  - 905. Société Industrielle d'Horlogerie.
  - 906. Société Vaudoise des Sciences Naturelles.
- 907. Luzern-Historischer Verein der fünf Oerter.
- 908. Neuchatel—Observatoire (Dr. Hirsch, Director). 909. Société des Sciences Naturelles.
- 910. Porrentruy-Société Jurassienne d'Émulation.
- 911. Rheinfelden-Naturhistorische Gesellschaft.
- 912. Rapperswyl-Musée National Historique de la Pologne.
- 913. St. Gallen-Naturwissenschaftliche Gesellschaft.
- 914. Sion-Société Valaisanne des Sciences Naturelles.
- 915. Solothurn-Naturforschende Gesellschaft.
- 916. Yverdon-Institute des Sourds-Muets à Yverdon.
- 917. Zürich-Eidgenössische Polytechnische Schule.
  - 918. Gesellschaft für Vaterländische Alterthümer.
  - 919. Karten Verein.
  - 920. Meteorologische Centralanstalt der Schweiz. Naturforschende Gesellschaft.
  - 921. Naturforschende Gesellschaft.
  - 922. Société des Sciences.
  - 923. Sternwarte.
  - 924. Universitäts-Bibliothek.
  - 925. Verein für Landwirthschaft und Gartenbau.

#### BELGIUM.

- 926. Anvers (Antwerp)—Académie d'Archéologie de Belgique.
  - 927. Académie Royale des Beaux-Arts.
  - 928. Bibliothèque Publique de la Ville.
  - 929. Cercle Artistique, Littéraire et Scientifique d'Anvers.

- 930. Société Belge de Géographie.
- 931. Société de Médecine.
- 932. Société "de Olyftak."
- 933. Société de Pharmacie.
- 934. Société de Vlaemsche Vrienden.
- 935. Société Royale pour l'Encouragement des Beaux-Arts.
- 936. Société Royale d'Horticulture et d'Agriculture.
- 937. Société Royale de Zoologie.
- 938. Arlon-Bibliothèque Publique.
- 939. Ath-Bibliothèque Publique.
- 940. Audenarde—Bibliothèque Publique.
- 941. Bruges-Bibliothèque Publique.
  - 942. Cercle Artistique et Littéraire.
  - 943. Société d'Emulation pour l'étude de l'Histoire et des Antiquités de la Flandre.
  - 944. Société pour l'Encouragement des Beaux-Arts et de la Littérature.
  - 945. Société d'Horticulture et de la Botanique
  - 946. Société Médico-chirurgicale de Bruges.
- 947. Bruxelles (Brussels)—Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique.
  - 948. Bibliothèque de la Chambre des Représentants.
  - 949. Bibliothèque Royale de Belgique.
  - 950. Bibliothèque de l'Université.
  - 951. Cercle Artistique et Littéraire.
  - 952. Commission Administrative du Musée Royale de l'Industrie.
  - 953. Commission des Annales des Travaux Publics.
  - 954. Commission Centrale de Statistique.
  - 955. Commission Royale d'Histoire.
  - 956. Établissement Géographique de Bruxelles.
  - 957. Government of Belgium.
  - 958. Musée Royal d'Antiquités, d'Armures et d'Artillerie.
  - 959. Musée Royal d'Histoire Naturelle.
  - 960. Observatoire Royal.
  - 961. Société Anatomo-pathologique de Bruxelles.
  - 962. Société Belge de Médecine Homœopathique.
  - 963. Société Centrale d'Agriculture de Belgique.
  - 964. Société Centrale des Instituteurs Belges.
  - 965. Société pour l'Encouragement des Arts Industriels.

- 966. Société Entomologique de Belgique.
- 967. Société d'Histoire de Belgique.
- 968. Société Malacologique de Belgique.
- 969. Société Medico-Chirurgicale pratique.
- 970. Société de Numismatique Belge.
- 971. Société de Pharmacie de Bruxelles.
- 972. Société Royale de Botanique de Belgique.
- 973. Société Royale de Flore.
- 974. Société Royale d'Horticulture.
- 975. Société Royale Linnéenne de Bruxelles.
- 976. Société Royale protectrice des Animaux.
- Société Royale de Zoologie, d'Horticulture et d'Agrement.
- 978. Société des Sciences Médicales et Naturelles.
- 979. Société Vésalienne.
- 980. Charleroi-Bibliothèque Publique.
  - 981. Société Paléontologique et Archéologique de l'Arrondissement.
- 982. Courtray-Bibliothèque Publique.
- 983. Furnes-Bibliothèque Publique.
- 984. Gand (Ghent)—Maatschappij van Nederlandsche Letterkunde en Geschiedenis: "de Tael is gansch het Volk."
  - 985. Société d'Histoire Naturelle.
  - 986. Société de Médecine.
  - 987. Société Royale d'Agriculture et de Botanique.
  - 988. Société Royale des Beaux-Arts et de Littérature.
  - 989. Société de Vlaemsche.
  - 990. Société: Het Willems fonds.
  - 991. Université.
- 992. Hasselt—Bibliothèque Publique.
- 993. Liége-Association des Ingenieurs élèves de l'École de Liége.
  - 994. Comité du Cercle Industriel.
  - 995. Conseil de Salubrit publique de la Province de Liége.
  - 996. Institut Archéologique Liégois.
  - 997. Société libre d'Emulation pour l'Encouragement des Lettres, Sciences, et Beaux-Arts, sous la devise: "Utile dulce."
  - 998. Société Liégeois de Littérature Wallonne.
  - 999. Société de Médecine.
  - 000. Société Royale d'Horticulture.

- 1001. Société Royale des Sciences.
- 1002. Société des Sciences Naturelles.
- 1003. Université de l'État.
- 1004. Lokeren-Bibliothèque Publique.
- 1005. Louvain-Bibliothèque Publique.
  - 1006. Société Littéraire de l'Université Catholique.
  - 1007. Université Catholique.
- 1008. Malines-Bibliothèque Publique.
- 1009. Mons-Bibliothèque Publique.
  - 1010. Cercle Archéologique.
  - 1011. Société des Anciens Elèves de l'École des Mines du Hainaut.
  - 1012. Société des Bibliophiles Belges.
  - 1013. Société des Sciences, des Arts et des Lettres du Hainaut.
- 1014. Namur-Bibliothèque Publique.
  - 1015. Cercle Artistique et Littéraire.
  - 1016. Société Agricole et Forestière de la Province de Namur.
  - 1017. Société Archéologique.
- 1018. Ostende-Bibliothèque Publique.
- 1019. St. Nicolas-Bibliothèque Publique.
  - 1020. Cercle Archéologique du Pays de Waas.
- 1021. Termonde—Bibliothèque Publique.
  - 1022. Cercle Archéologique de la Ville et de l'Ancien Pays de Termonde.
- 1023. Tirlemont—Bibliothèque Publique.
- 1024. Tongres-Société Scientifique et Littéraire du Limbourg.
- 1025. Tournai-Bibliothèque Publique.
  - 1026. Société Historique et Littéraire de Tournai.
- 1027. Verviers-Bibliothèque Publique.
  - 1028. Société Industrielle et Commerciale.
- 1029. Ypres-Bibliothèque Publique.
  - 1030. Société Historique, Archéologique et Littéraire de la Ville d'Ypres et de l'ancienne West-Flandre.

#### FRANCE.

- 1031. Association Scientifique de France.
- 1032. Congrès Scientifique de France.
- 1083. Institut des Provinces de France.

- 1034. Abbeville—Société Impériale d'Emulation. 1035. Société Linnéenne du Nord du France.
- 1036. Agen-Société d'Agriculture, Sciences et Arts d'Agen.
- 1037. Aix (Bouches du Rhône) Académie des Sciences, Agriculture, Arts et Belles-Lettres.
- 1038. Amiens—Académie des Sciences, Belles-Lettres, Arts, Agriculture et Commerce du Département de la Somme.
  - 1039. Société des Antiquaires de Picardie.
  - 1040. Société Linnéenne du Nord de la France.
- 1041. Angers-Société Académique de Maine-et-Loire.
  - 1042. Société d'Agriculture, Sciences et Arts.
  - 1043. Société Linnéenne du Département de Maine-et-Loire.
- 1044. Angoulème Société d'Agriculture, Arts et Commerce du Dép. de la Charente.
  - 1045. Société Archéologique de la Charente.
- 1046. Annecy-Société Florimontane.
- 1047. Arles-Commission Archéologique.
- 1048. Arras—Académie d'Arras.
- 1049. Aurillac-Société Académique.
- 1050. Auxerre Société des Sciences historiques et naturelles de l'Yonne.
- 1051. Avignon-Société Archéologique.
- 1052. Avranches—Société d'Archéologie, Littérature, Sciences et Arts d'Avranches.
- 1053. Bagnères de Bigorre—Société Ramond.
- 1054. Bayeux-Société d'Agriculture, Sciences, Arts et Belles-Lettres.
- 1055. Beauvais—Société Académique d'Archéologie, Sciences et Arts du Département de l'Oise.
- 1056. Bergues—Société de la Histoire et des Beaux-Arts de la Flandre Maritime.
- 1057. Besançon—Académie des Sciences, Belles Lettres et Arts. 1058. Société d'Emulation du Doubs.
- 1059. Béziers (Hérault)—Société Archéologique.
- 1060. Blois-Société des Sciences et Lettres.
- 1061. Bordeaux—Acad. Impériale des Sciences, Belles-Lettres et Arts.
  - 1062. Bibliothèque de la Ville de Bordeaux.
  - 1063. Chambre de Commerce.

- 1064. Commission des Monuments et Documents historiques et des Batiments civils.
  - 1065. Muséum d'Histoire Naturelle. ` 1066. Société d'Horticulture de la Gironde.
  - 1067. Société Humanitaire et Scientifique de Sud-Ouest de la France.
  - 1068. Société Linnéenne de Bordeaux.
  - 1069. Société Philomathique de Bordeaux. 1070. Société des Sciences Physiques et Naturelles.
- 1071. Boulogne—Société Académique.
- 1072. Bourg-Société d'Emulation de l'Ain.
- 1073. Bourges—Commission Historique du Cher.
- 1074. Société d'Agriculture du Département du Cher. 1075. Brest—Bibliothèque de la Marine Impériale.
- 1076. Société Académique de Brest.
- 1077. Caen—Académie des Sciences, Arts et Belles-Lettres.
- 1078. Société d'Agriculture et de Commerce de Caen.
  - 1079. Société des Antiquaires de Normandie.
  - 1080. Société Linnéenne de Normandie.
  - 1081. Société de Médecine de Caen.
- 1082. Cambrai—Société d'Emulation.
- 1083. Chambery—Académie Impériale de Savoie.
- 1084. Châlons-sur-Marne Société d'Agriculture, Commerce et Sciences de la Marne.
- 1085. Châlons-sur-Saône—Société Arcnéologique de Châlons.
- 1086. Chartres-Société Archéologique d'Eure et Loire.
- 1087. Cherbourg—Société Académique de Cherbourg.
  1088. Société Imp. des Sciences Naturelles de Cherbourg.
- 1089. Clermont-Ferrand-Académie des Sciences, Belles-Lettres et Arts.
- et Arts.

  1090. **Dijon**—Académie des Sciences, Arts et Belles-Lettres de Dijon
- 1091. Commission Archéologique de la Côte d'Or.
   1092. Société d'Agriculture et d'Industrie Agricole du Département de la Côte d'Or.
- 1093. Douai—Association Vétérinaire des Départements du Nord et du Pas-de-Calais.
  - 1091. Musée d'Histoire Naturelle.
  - 1095. Société Impériale d'Agriculture, Sciences et Arts de Douai.

France. 39

•

- 1096. Draguignan-Société des Études scientifiques et littéraires.
- 1097. Dunkerque—Société Dunkerquoise pour l'Encouragement des Sciences.
- 1098. Epinal-Société d'Emulation des Vosges.
- 1099. Evreux—Société Libre d'Agriculture, Sciences, Arts et Belles-Lettres de l'Eure.
- 1100. Grenoble—Société de Statistique du Département de l'Isère.
- 1101. Gueret-Société des Sciences Naturelle de la Creuse.
- 1102. Havre-Société Havraise d'Études diverses.
- 1103. Langres-Société Historique et Archéologique.
- 1104. Le Mans-Société d'Agriculture, Science et Arts de la Sarthe.
- 1105. Le Puy-Société d'Agriculture, Sciences, Arts et Commerce.
- 1106. Lille-Comité Flamand de France.
  - 1107. Société Impériale des Sciences, de l'Agriculture et des Arts.
- 1108. Limoges-Société Archéologique du Limousin.
  - 1109. Société des Sciences, Agriculture et Arts de la Haute-Vienne.
- 1110. Lons-le-Saulnier-Société d'Emulation du Jura.
- Lyon—Académie Impériale des Sciences, Belles-Lettres et Arts de Lyon.
  - 1112. Commission Hydrométrique de Lyon.
  - 1113. Société Impériale de l'Agriculture, Histoire Naturelle et Arts Utiles de Lyon.
  - 1114. Société Linnéenne de Lyon.
  - 1115. Société des Sciences Industrielles.
- 1116. Mâcon—Académie de Mâcon: Soc. des Arts, Belles-Lettres et d'Agriculture.
- 1117. Marseille-Académie des Sciences, Lettres et Arts.
  - 1118. Bibliothèque de la Ville de Marseille.
  - Société du Département d'Agriculture des Bouches du Rhône.
  - 1120. Observatoire.
- 1121. Mayenne-Société Archéologique de la Mayenne.
- 1122. Mende—Société d'Agriculture, Industrie, Sciences et Arts du Département de la Lozère.
- 1123. Montauban—Société des Soiences, Agriculture et Belles-Lettres de Tarn et Garonne.

- 1124. Montbéliard-Société d'Emulation.
- 1125. Montpellier-Académie de Montpellier: Faculté de Médecine.
  - 1126. Académie des Sciences et Lettres de Montpellier.
  - 1127. Messager Agricole.
  - 1128. Société Archéologique de Montpellier.
  - 1129. Société Centrale d'Agriculture du Département de la Herault.
  - 1130. Société Générale d'Encouragement à la Sericiculture.
- 1131. Moulins—Société d'Emulation du Département de l'Allier. 1132. Société d'Horticulture de l'Allier.
- 1133. Nancy-Académie de Stanislas.
- 1134. Nantes-Société Académique de Nantes et du Dép. de la Loire inférieure.
  - 1135. Société d'Histoire Naturelle.
- 1136. Nice—Société Centrale d'Agriculture, d'Horticulture et d'Acclimatation.
  - 1137. Société des Lettres, Sciences et Arts des Alpes maritimes.
- 1138. Nimes-Académie du Gard.
  - 1139. Société d'Horticulture et de Botanique du Gard.
- 1140. Orléans—Société d'Agriculture, Sciences, Belles-Lettres et Arts d'Orléans.
  - 1141. Société Archéologique de l'Orléanais.
- 1142. Paris—Gustave Bossange, Libraire, 16 Rue du dix Decembre (Agent of the Smithsonian Institution).
  - 1143. Académie Impériale de Médecine.
  - 1144. Administration des Lignes télégraphiques.
  - 1145. Annales des Ponts et Chaussées.
  - 1146. Annales des Sciences Naturelles.
  - 1147. Archives générales de Médecine.
  - 1148. L'Athenée Oriental.
  - 1149. Bibliothèque de la Ville de Paris.
  - 1150. Bibliothèque du Jardin des Plantes (Muséum d'Histoire Naturelle).
  - 1151. Bibliothèque Impériale.
  - 1152. Bibliothèque Municipale du Seizième Arrondissement de Paris.
  - 1153. Bibliothèque Polonaise historique littéraire
  - 1154. Bureau des Longitudes.

- 1155. Comité d'Archéologie Américaine.
- 1156. Conservatoire des Arts et Métiers.
- 1157. Cosmos.
- 1158. Dépot des Cartes et Plans.
- 1159. École Impériale des Mines.
- 1160. École Impériale et Spéciale des Langues orientales vivantes.
- 1161. École Polytechnique.
- 1162. Gazette Médicale de Paris.
- 1163. Institut de France.
- 1164. Institut Historique de France.
- 1165. Journal d'Agriculture pratique.
- 1166. Journal de Conchyliologie.
- 1167. Journal des Savants.
- 1168. Ministère du Commerce et Agriculture.
- 1169. Ministère des Affaires Étrangères (Dép. de Statistique).
- 1170. Ministère de la Guerre.
- 1171. Ministère de l'Instruction Publique et des Cultes.
- 1172. Ministère des Lettres, de Sciences et Beaux-Arts.
- 1173. Ministère de la Marine et des Colonies.
- 1174. Ministère des Travaux publics.
- 1175. Observatoire Impérial.
- 1176. Observatoire Météorologique Central de Montsouris.
- 1177. Petites Nouvelles Entomologiques.
- 1178. Revue des Cours Littéraires.
- 1179. Revue Horticole.
- 1180. Revue et Magazin de Zoologie.
- 1181. Revue de Sericiculture comparée.
- 1182. Revue Scientifique de la France et de l'Étranger
- 1183. Société d'Acclimatation.
- 1184. Société d'Anthropologie.
- 1185. Société des Antiquaires.
- 1186. Société des Architectes.
- 1187. Société Asiatique.
- 1188. Société de Biologie.
- 1189. Société Botanique de France.
- 1190. Société Centrale d'Horticulture de Paris.
- 1191. Société Chimique de Paris.
- 1192. Société de l'École des Chartes.
- 1193. Société d'Encouragement pour l'Industrie Nationale.

- 1194. Société Entomologique de France.
- 1195. Société d'Ethnographie.
- 1196. Société Française pour la conservation des Monuments Historiques.
- 1197. Société Française de Statistique Universelle Acad. Nat. Agr. Manufactur. et Commerciale)
- 1198. Société de Géographie.
- 1199. Société Géologique de France.
- 1200. Société de l'Histoire de France.
- 1201. Société de l'Histoire du Protestantisme Français.
- 1202. Société d'Horticulture de la Seine.
- 1203. Société Impériale et Centrale d'Agriculture de France. 1204. Société Impériale et Centrale de Médecine Vétérinaire.
- 1205. Société des Ingenieurs Civils.
- 1206. Société Médicale Allemande de Paris.
- 1207. Société Médicale Homosopathique.
- 1208. Société Météorologique de France.
- 1209. Société Orientale de France.
- 1210. Société de Pharmacie.
- 1211. Société Philomatique.
- 1212. Société Polytechnique.
- 1213. Société de Statistique de Paris.
- 1214. Perigueux-Société d'Agriculture, Sciences et Arts de la Dordogne.
- 1215. Perpignan-Société Agricole, Scientifique et Littéraire des Pyrenées Orientales.
- 1216. Poitiers-Société d'Agriculture, Belles-Lettres, Sciences et Arts de Poitiers.
  - 1217. Société des Antiquaires de l'Ouest.
- 1218. Poligny-Société d'Agriculture, Sciences et Arts de Poligny.
- 1219. Privas-Société des Sciences Historiques et Naturelles de l'Ardèche.
- 1220. Rambouillet—Société Archéologique.
- 1221. Reims-Académie des Sciences, Belles-Lettres et Arts.
  - 1222. Muséum d'Histoire Naturelle de Reims. 1223. Société des Sciences Naturelles.
- 1224. Rennes-Bibliothèque de Rennes.
  - 1225. Société Archéologique du Dép. d'Ille et Vilaine.
  - 1226. Société des Sciences Physiques et Naturelles du Dép. d'Ille et Vilaine.

- 1227. Rochefort.—Société d'Agriculture, des Belles-Lettres, Sciences et Arts de Rochefort.
- 1223. Rouen—Académie des Sciences, Belles-Lettres et Arts de Rouen.
  - 1223. Bibliothèque de la Ville de Rouen.
  - 1230. Société des Amis des Sciences Naturelles de Rouen.
  - 1231. Société Libre d'Emulation du Commerce et de l'Industrie de la Seine inférieure.
- 1232. Saint-Étienne-Société de l'Industrie Minérale.
- 1233. Saint-Jean-d'Angely-Société Historique de St. Jean d'Angely.
- 1234. Saint-Lo-Société d'Agriculture, d'Archéologie et d'Histoire Naturelle de Dép. de la Manche.
- 1235. Saint-Omer-Société des Antiquaires.
- 1236. Saint-Quentin—Société Académique des Sciences, Arts, Belles-Lettres et Agriculture.
- 1237. Senlis-Comité Archéologique de Senlis.
- 1238. Sens-Société Archéologique.
- 1239. Soissons—Société des Sciences, Belles-Lettres et Arts.
- 1240. Tarbes—Société Académique des Hautes-Pyrénées.
- 1241. Toulon—Société Académique.
- 1242. Toulouse—Académie Impériale des Sciences, Inscriptions et Belles-Lettres de Toulouse.
  - 1243. Académie des Jeux Floraux.
  - 1244. Observatoire.
  - 1245. Société d'Histoire Naturelle de Toulouse.
  - 1246. Société Impériale de Médecine, Chirurgie et Pharmacie de Toulouse.
- 1247. Tours—Société d'Agriculture, des Sciences, des Arts et des Belles-Lettres.
- 1248. Troyes—Académie Royale de l'Aube.
  - 1249. Société d'Agriculture, Sciences, Arts et Belles-Lettres de l'Aube.
- 1250. Valence—Société Départementale d'Agriculture de la Drôme.
- 1251. Valenciennes Société Impériale d'Agriculture, Sciences et Arts de l'Arrondissement de Valenciennes (Nord).
- 1252. Vannes-Société Polymathique du Morbihan.
- 1253. Versailles-Société d'Agriculture et des Arts de Seine et Oise.

- 1254. Vesoul—Commission d'Archéologie de la Haute-Saône.
  - 1255. Société d'Agriculture, Science et Arts de la Haute-Saône.
- 1256. Vitry-le-François—Société des Sciences et Arts de Vitry-le-François.

# ITALY.

- 1257. Arezzo (Tuscany)—Accademia Valdarnese del Pozzio.
- 1258. Bergamo-Accademia di Carrara di Belle Arti.
  - 1259. Ateneo di Bergamo.
  - 1260. Società Industriale Bergamasca.
- 1261. Bologna-Accademia delle Scienze dell' Istituto di Bologna.
  - 1262. Arch. per la Zoologia, l'Anatomia e la Fisiologia.
  - 1268. Gabinetto Anatomia dell' Università.
  - 1264. Museo di Geologia dell' Università.
  - 1265. Repertorium Italicum di Bianconi.
  - 1266. Scuola Anatomica di Bologna.
  - 1267. Società Agraria della Provincia di Bologna.
  - 1268. Società Medico-Chirurgica.
  - 1269. Università di Bologna.
- 1270. Brescia.—Ateneo di Brescia.
- 1271. Carrara Accademia Reale di Belle Arti.
- 1272. Catania-Accademia Gioenia di Scienze Naturali.
- 1273. Faenza-Società Scientifica e Letteraria.
- 1274. Firenze (Florence) Accademia Economico-agraria dei Georgofili.
  - 1275. Biblioteca Marucelliana.
  - 1276. Biblioteca Nazionale.
  - 1277. Biblioteca Riccardiana.
  - 1278. Biblioteca di Sua Maesta il Re d'Italia.
  - 1279 Direzione dell' Archivio per l'Antropologia e la Entologia.
  - 1280. Istituto di Studi Superiori in Firenze.
  - 1281. Ministero di Agricoltura, Industria e Commercio.
  - 1282. Ministero della Guerra.
  - 1283. Ministero dell' Intorno.
  - 1284. Ministero dell' Istruzione Pubblica.
  - 1285. Ministero dei Lavori Pubblica.
  - 1286. Ministero della Marina.

45

- 1287. Nuova Antologia di Firenze.
- 1288. Nuova Giornale Botanico Italiano.
- 1289. Reale Accademia della Crusca.
- 1290. R. Comitato Geologico d'Italia.
- 1291. Reale Museo di Fisica e Storia Naturale di Firenze.
- 1292. Regio Osservatorio.
- 1293. Società Entomologica Italiana.
- 1294. Società Geografica Italiana.
- 1295. Ufficio di Statistica Generale.

# 1296. Genova (Genoa)—Accademia delle Scienze, Lettere ed Arti.

- 1297. Accademia Medico-chirurgica di Genova.
- 1298. Museo Civico di Storia Naturale.
- 1299. Osservatorio.
- 1300. R. Istituto de Sordo-Muti.
- 1301. R. Istituto Tecnico e di Marina.
- 1302. Università.
- 1303. Società di Lettere e Conversazioni Scientifiche.
- 1304. Società Ligure di Storia Patria.

## 1305. Lucca-Reale Accademia dei Filomati.

1306. Reale Accademia Lucchese di Scienze, Lettere ed Arti.

# 1307. Milano-Accademia Fisio-medico-statistica di Milano.

- 1308. Accademia Scientifico-Letteraria.
- 1309. Ateneo di Scienze, Lettere ed Arti.
- 1310. Biblioteca Ambrosiana.
- 1311. Biblioteca Nazionale.
- 1312. Collegio degli Ingegnere ed Architetti.
- 1313. Giornale dell' Ingegnere, Architetto ed Agronomia.
- 1314. Istituto Tecnico.
- 1315. Municipio di Milano.
- 1316, Museo Civico di Storia Naturale.
- 1317. Museo Patrio d'Archeologia.
- 1318. Museo di Storia Naturale dei fratelli Villa.
- 1319. Ospedale Maggiore di Milano.
- 1320. Reale Accademia di Belle Arti.
- 1321. Reale Gabinetto Numismatico.
- 1322. Reale Istituto Lombardo di Scienze e Lettere.
- 1323. Reale Istituto dei Sordo-muti.
- 1324. Reale Istituto Veterinario.
- 1325. Reale Osservatorio Astronomico di Brera.
- 1326. Società Agraria di Lombardia.

- 1327. Società degli Artisti.
- 1328. Società d'Incoraggiamento Arti e Mestieri.
- 1329. Società Italiana di Scienze Naturali.
- 1330. Società Lombardia di Economia Politica.
- 1331. Società Patriotica.
- 1332. Società Pedagocica Italiana.
- 1333. Modena-Accademia di Scienze, Lettere ed Arti.
  - 1334. Osservatorio.
  - 1335. Società Italiana delle Scienze.
  - 1336. Società dei Naturalisti in Modena.
  - 1337. Università di Modena.
- 1338. Moncalieri-Osservatorio del R. Collegio C. Alberto.
- 1339. Napoli (Naples)—Accademia degli Aspiranti Naturalisti.
  - 1340. Accademia Pontaniana.
  - 1341. Biblioteca Nazionale.
  - 1342. Istituto di Belle Arti di Napoli.
  - 1343. Museo Nazionale de Napoli.
  - 1344. Osservatorio.
  - 1345. Reale Accademia di Archeologia, Lettere e Belle Arti.
  - 1346. Reale Accademia Ercolanese di Archeologia.
  - 1347. Reala Accademia Medico-Chirurgica.
  - 1348. Reale Accademia delle Scienze e Belle Lettere.
  - 1349. R. Istit. d'Incoraggiamento alle Scienze Naturali, Economiche e Tecnologiche.
  - 1350. R. Orto Botanico di Napoli.
  - 1351. R. Scuola d'applicazione per gli Ingegneri.
  - 1352. R. Scuola Superiore di Medicine Veterinaria.
  - 1353. Società Reale di Napoli.
  - 1354. Università.
- 1355. Padova (Padua)—Osservatorio Astronomico dell' Università. 1356. Reale Accademia di Scienze, Lettere ed Arti di Padova.
- 1357. Palermo-Accademia Palermitana di Scienze e Lettere.
  - 1358. Biblioteca Nazionale.
  - 1359. R. Istituto d'Incoraggiamento di Agricoltura, Arti e Manifatture in Sicilia.
  - 1360. R. Istituto Tecnico.
  - 1361. R. Osservatorio.
  - 1362. Società di Acclimazione e di Agricoltura in Sicilia.

- 1363. Parma—Biblioteca Nazionale.
- 1364. Pavia—Accademia Malaspina.

1365. Biblioteca Civica.

1366. R. Università.

- 1367. Pesaro—Accademia Agraria di Pesaro.
- 1368. Pisa—R. Scuola Normale Superiore. 1369. Università.
- 1370. Pistoja-R. Accademia di Scienze, Lettere ed Arti.
- 1371. Ravenna-Società Ravennate.
- 1372. Roma—Accademia Romana di Archeologia.
  - 1373. Biblioteca Vaticana.
  - 1374. British Academy of Fine Arts.
  - 1375. British Archeological Society.
  - 1376. Corrispondenza Scientifica in Roma.
  - 1377. Governo Pontificio.
  - 1378. Osservatorio Astronomico del Collegio Romano.
  - 1379. Ospedali.
  - 1380. Reale Accademia dei Lincei.
  - 1381. R. Istituto Fisio-Patologico di Roma.
- 1382. Siena-R. Accademia dei Fisiocritici.
  - 1383. Università (including Osservatorio).
- 1384. Torino (Turin)—Accademia Reale di Agricoltura.
  - 1385. Accademia Reale Medico-Chirurgica.
  - 1386. Accademia Reale delle Scienze.
  - 1387. Circolo Geografico Italiano.
  - 1388. Museo Industriale Italiano di Torino.
  - 1389. R. Accademia Albertina di Belle Arti.
  - 1390. R. Accademia di Medicina.
  - 1391. R. Scuola d'applicazione per gli Ingegneri.
  - 1392. R. Scuola Superiore di Medicine Veterinaria.
  - 1393. Regio Deputazione Sovra gli Studii di Storia Patria.
  - 1394. Regio Museo di Storia Naturale.
  - 1395. Regio Osservatorio dell' Università.
  - 1396. Università.
- 1397. Udine-Associazione Agraria Friulana.
  - 1398. R. Istituto Tecnico.
- 1399. Venezia (Venice)—Accademia di Belle Arti.
  - 1400. Ateneo Veneto.
  - 1401. Biblioteca Marciana.

- 1402. Biblioteca Publica.
- 1403. Mechitaristen-Collegium.
- 1404. R. Istituto Veneto di Scienze, Lettere ed Arti.
- 1405. Verona.—Accademia d'Agricoltura, Commercio ed Arti di Verona.
- 1406. Vicenza—Accademia Olimpica di Agricultura, Scienze, Lettere ed Arti.

## PORTUGAL.

- 1407. Coimbra-Universidade.
- 1408. Lisbon (Lisbon)—Academia Real das Sciencias.
  - 1409. Biblioteca Nacional.
  - 1410. Escola da Exercito.
  - 1411. Escola Medico-cirurgica.
  - 1412. Escola Naval.
  - 1413. Escola Polytechnica.
  - 1414. Instituto Industrial de Lisboa.
  - 1415. Instituto Real de Agricultura e de Veterinaria.
  - 1416. Museo de Lisboa.
  - 1417. Observatorio Astronomico da Tapada.
  - 1418. Observatorio do Infante D. Luiz.
  - 1419. Observatorio Meteorologico na Escula Polytechnica.
  - 1420. Real Observatorio de Marinha.
  - 1421. Sociedade Pharmaceutica Lusitana.
  - 1422. Sociedade Real de Agricoltura Portuguesa.
  - 1423. Sociedade des Sciencias Medicas de Lisboa.
- 1424. Oporto-Academia Polytechnica.
  - 1425. Escola Medico-cirurgica.
  - 1426. Pegneno Museu de Historia Natural da Camara Municipal do Porto.

#### SPAIN.

- 1427. Barcelona-Real Academia de Buenas Letras de Barcelona.
- 1428. Madrid-Acad. de las tres Nobles Artes de San Fernando.
  - 1429. Accademia Especial de Ingenieros.
  - 1480. Biblioteca Nacional.
  - 1431. Observatorio de Madrid.
  - 1432. Real Academia de Ciencias de Madrid.
  - 1433. Real Academia de Ciencias Morales y Politicas.

- 1434. Real Academia Española Arqueologica y Geografica.
- 1435. Real Academia de la Historia.
- 1436. San Fernando.—Observatorio de Marina.
- 1437. Valencia-Real Sociedad Económica.

# GREAT BRITAIN AND IRELAND.

- 1438. Aberdeen-Observatory.
  - 1439. Philosophical Society.
  - 1440. University.
- 1441. Alnwick-Berwickshire Naturalists' Club.
- 1442. Armagh-Natural History Society.
  - 1443. Observatory.
  - 1444. Public Library.
- 1445. Aylesbury—Buckinghamshire Architectural and Archæological Society.
- 1446. Bath—Bath and West of England Agricultural Society. 1447. Bath Natural History and Antiquarian Field Club.
- 1448. Bedford-Bedfordshire Architectural and Archæological Society.
- 1449. Belfast-Belfast Institution.
  - 1450. Belfast Naturalists' Field Club.
  - 1451. Chemico-Agricultural Society of Ulster.
  - 1452. Flax Extension Association.
  - 1453. Natural History and Philosophical Society.
  - 1454. Queen's College.
- 1455. Birmingham—Birmingham Natural History and Microscopical Society.
  - 1456. Free Reference Library.
  - 1457. Institution of Mechanical Engineers.
- 1458. Blackburn-Free Library and Museum.
- 1459. Boston (Lincolnshire)-Working Men's College.
- 1460. Brighton-Brighton and Sussex Natural History Society.
- 1461. Bristol—Bristol Institution for the Advancement of Science,
  Literature, and the Fine Arts.
  - 1462. Bristol Naturalists' Society.
  - 1463. City Library.
- 1464. Bury St. Edmunds—Suffolk Institute of Archeology and Natural History.

- 1465. Cambridge—Cambridge Antiquarian Society.
  - 1466. Cambridge Free Library.
  - 1467. Cambridge Observatory,
  - 1468. Cambridge Philosophical Society.
  - 1469. Journal of Anatomy and Physiology.
  - 1470. University Library.
- 1471. Devizes—Wiltshire Archæological and Natural History Society.
- 1472. Devonshire—Devoushire Association for the Advancement of Science, Literature, and Art.
- 1473. Donoaster-Yorkshire Institution for the Deaf and Dumb.
- 1474. Dover-East Kent Natural History Society.
- 1475. Chester—Chester and Cheshire Architectural and Archeological Society.
- 1476. Churts (near Farnham)—Mr. R. Carrington's Observatory.
- 1477. Cirencester—Royal Agricultural College.
- 1478. Cork-Cuvierian and Archæological Society.
  - 1479. Library of Queen's College.
  - 1480. Royal Cork Institution.
- 1481. Cotteswold—Cotteswold Naturalists' Field Club.
- 1482. Dublin—Catholic College of Ireland.
  - 1483. Catholic Institution for the Deaf and Dumb.
  - 1484. Chemical Society of Dublin.
  - 1485. Dublin Quarterly Journal of Science.
  - 1486. Dublin University Philosophical Society.
  - 1487. Dublin University Zoological and Botanical Association.
  - 1488. Institution of Civil Engineers of Ireland.
  - 1489. Institution for Deaf and Dumb (Claremont).
  - 1490. Irish Archæological and Celtic Society.
  - 1491. Library of Trinity College.
  - 1492. Natural History Society of Dublin.
  - 1493. Observatory.
  - 1494. Royal Dublin Society.
  - 1495. Royal Geological Society of Ireland.
  - 1496. Royal Irish Academy.
  - 1497. Royal Zoological Society of Ireland.
- 1498. Dudley—Dudley and Midland Geological and Scientific Society and Field Club.

- 1499. **Dumfries** Dumfriesshire and Galloway Natural History and Antiquarian Society.
- 1500. Durham-Observatory.
- 1501. Edinburgh—Botanical Society.
  - 1502. Caledonian Horticultural Society.
  - 1503. Edinburgh Geological Society.
  - 1504. Edinburgh Watt Institution and School of Arts.
  - 1505. Faculty of Advocates.
  - 1506. Highland and Agricultural Society of Scotland.
  - 1507. Horological Society of Edinburgh.
  - 1508. Medico-Chirurgical Society of Edinburgh.
  - 1509. Meteorological Society of Scotland.
  - 1510. Pharmaceutical Society (North British Branch).
  - 1511. Royal College of Physicians.
  - 1512. Royal Institution for Encouragement of Fine Arts in Scotland.
  - 1513. Royal Observatory.
  - 1514. Royal Physical Society.
  - 1515. Royal Scottish Society of Arts.
  - 1516. Royal Society of Edinburgh.
  - 1517. Society of Antiquaries of Scotland.
  - 1518. University Library.
- 1519. Eton—Eton College.
- 1520. Exeter-Albert Memorial Museum.
- 1521. Falmouth—Royal Cornwall Polytechnic Society.
- 1522. Farnboro' Station (Hants)—Royal Military College.
- 1523. Galway—Library of Queen's College.
- 1524. Glasgow-Andersonian Institute
  - 1525. Archæological Society.
  - . 1526. Geological Society.
  - 1527. Glasgow Medical Journal.
  - 1528. Institution of Engineers in Scotland.
  - 1529. Observatory.
  - 1530. Philosophical Society.
  - 1531. University Library.
- 1532. Greenwich—Royal Observatory.
- 1533. Huddersfield Huddersfield Archæological Typographical Association.

- 1534. Hull—Hull Literary and Philosophical Society. Royal Institu-1585. Subscription Library. Royal Institu-
- 1536. Keighley-Keighley Agricultural Society.
- 1537. **Kew**—Royal Botanic Gardens. 1538. Observatory.
- 1539. Kilkenny—Royal Historical and Archæological Association of Ireland.
- 1540. Kirkwall-Orkney Antiquarian and Natural History Society.
- 1541. Leamington-Leamington Philosophical Society.
- 1542. Leeds—Geological and Polytechnic Society of the West Riding of Yorkshire.
  - 1543. Leeds Philosophical and Literary Society.
  - 1544. Leeds Public Library.
- 1545. Leicester Free Library.
  - 1546. Leicester Literary and Philosophical Society.
- 1547. Lewes-Sussex Archæological Society.
- 1548. Leyton (Essex)—Private Observatory of Joseph G. Barclay.
- 1549. Liverpool—Anthropological Society.
  - 1550. Architectural and Archæological Society.
  - 1551. Derby Museum.
  - 1552. Free Public Library, Museum, and Gallery of Art of the Town of Liverpool.
  - 1553. Geological Magazine.
  - 1554. Geological Society.
  - 1555. Historic Society of Lancashire and Cheshire
  - 1556. Literary and Philosophical Society.
  - 1557. Liverpool Chemists' Association.
  - 1558. Liverpool Naturalist's Field Club.
  - 1559. Liverpool Polytechnic Society.
  - 1560. Observatory.
  - 1561. Royal Institution.
- 1562. London-Her Majesty the Queen of Great Britain and Ireland.
  - 1563. William Wesley, Bookseller, 28 Essex Street, Strand (Agent Smithsonian Institution).
  - 1564. Aborigines Protection Society.
  - 1565. Aëronautical Society of Great Britain.
  - 1566. Annals and Magazine of Natural History.
  - 1567. Anthropological Institute of Great Britain and Ireland.
  - 1568. Architectural Publication Society.

- 1569. Art Union of London.
- 1570. Arundel Society.
- 1571. Athenseum Club.
- 1572. Mr. Bishop's Observatory, 18 Ropemaker's St., Finsbury.
- 1573. Board of Admiralty.
- 1574. Board of Trade.
- 1575. British Archæological Association.
- 1576. British Association for the Advancement of Science.
- 1577. British Government.
- 1578. British Homocopathic Society.
- 1579. British Horological Institute.
- 1580. British Meteorological Society.
- 1581. British Museum.
- 1582. Camden Society.
- 1583. Caxton Society.
- 1584. Chemical News.
- 1585. Chemical Society of London.
- 1586. Chemist and Druggist.
- 1587. Chronological Institute of London.
- 1588. Civil and Mechanical Engineers Society
- 1589. Corps of Royal Engineers.
- 1590. Department of Practical Art.
- 1591. Duke of Northumberland.
- 1592. English Mechanic and Mirror of Science.
- 1593. Entomological Society.
- 1594. Entomologists' Monthly Magazine.
- 1595. Entomologist.
- 1596. Epidemiological Society.
- 1597. Ethnological Journal.
- , 1598. Prof. W. H. Flower.
- 1599. Genealogical and Historical Society.
- 1600. Geological Magazine.
- 1601. Geological Society of London.
- 1602. Geologists' Association.
- 1603. Great Seal Patent Office.
- 1604. Guy's Hospital Physical Society.
- 1605. Hakluyt Society.
- 1606. Hardwicke's Science-Gossip.
- 1607. Harveian Medical Society of London.
- 1608. Hunterian Society.

- 1609. The Ibis, a Magazine of General Ornithology.1610. Institute of Actuaries of Great Britain and Ireland.
  - 1611. Institution of Civil Engineers.
  - 1612. Institution of Naval Architects.
  - 1613. Institution of Hydronomical and Nautical Engineers. 1614. Inventors' Institute.
  - 1615. Journal of Applied Science.
  - 1616. Land and Water.
  - 1617. Library of Committee of Privy Council for Trade. 1618. Library of Corporation of City of London.
  - 1619. Library of the Foreign Office.
  - 1620. Library of the Hon. the East India Company.
  - 1621. Library of the House of Commons.
  - 1622. Library of the House of Lords.
  - 1623. Linnsean Society.
  - 1624. London, Edinburgh, and Dublin Philosophical Magazine.
  - 1625. London Institution (Finsbury Circus). 1626. London Library.
  - 1627. London Mathematical Society.
  - 1628. London Mechanics' Institution.
  - 1629. London and Middlesex Archeological Society.
  - 1630. Medical Society of London.
  - 1631. Meteorological Office, 116 Victoria Street.
  - 1632. Museum of Practical Geology.
  - 1633. National Association for the Promotion of Social Science.
  - 1634. Nature.
  - 1635. Nautical Almanac Office.
  - 1636. Numismatic Society.
  - 1637. Obstetrical Society of London.
  - 1638. Odontological Society.
  - 1639. Palæontographical Society.
  - 1640. Palæontological Society.
  - 1641. Pathological Society.
  - 1642. Pharmaceutical Society.
  - 1643. Philological Society.1644. Photographic Society.
  - 1645. Popular Science Review.
  - 1646. Post-Office Library and Literary Association.
  - 1647. Quarterly Journal of Science.

- 1648. Quekett Microscopical Club.
- 1649. Ray Society.
- 1650. Royal Agricultural Society of England.
- 1651. Royal Archeological Institute of Great Britain and Ireland.
- 1652. Royal Asiatic Society of Great Britain and Ireland.
- 1653. Royal Astronomical Society.
- 1654. Royal Botanic Society.
- 1655. Royal College of Physicians of London.
- 1656. Royal College of Surgeons of England.
- 1657. Royal Geographical Society of London.
- 1658. Royal Horticultural Society of London.
- 1659. Royal Humane Society.
- 1660. Royal Institute of British Architects.
- 1661. Royal Institution of Great Britain.
- 1662. Royal Medical and Chirurgical Society.
- 1663. Royal Microscopical Society.
- 1664. Royal National Life-Boat Institution.
- 1665. Royal Society of Literature.
- 1666. Royal Society of London.
- 1667. Royal United Service Institution.
- 1668. General Sir Edward Sabine.
- 1669. Scientific Opinion.
- 1670. Silk Supply Association.
- 1671. St. Bartholomew's Hospital.
- 1672. Society of Antiquaries of London.1673. Society of Apothecaries of London.
- 1674. Society for the Encouragement of Arts, Manufactures, and Commerce.
- 1675. Society of Engineers.
- 1676. Society for the Promotion of Christian Knowledge.
- 1677. Society for the Propagation of the Gospel in Foreign Parts. •
- 1678. Statistical Society of London.
- 1679. Student and Intellectual Observer.
- 1680. Surrey Archæological Society.
- 1681. Syro-Egyptian Society.
- 1682. Trübner & Co., Booksellers, 8 Paternoster Row.
- 1683. University College.
- 1684. Victoria Institute; or Philosophical Society of Great Britain.

1685. Zoological Society of London.

1686. Zoologist.

1687. Zoological Record Association.

1688. Londonderry—Magee College.

1689. Macclesfield — Macclesfield Society for Acquiring Useful Knowledge.

1690. Maidstone-Kent Archeological Society.

1691. Manchester-Chetham's Library.

1692. Geological Society.

1693. Lancashire Independent College.

1694. Literary and Philosophical Soc. of Manchester.

1695. Manchester Field Naturalists' Society.

1696. Manchester Free Library and Museum.

1697. Manchester Scientific Students' Association.

1698. Numismatic Society.

1699. Owen's College.

1700. Maynooth—College Library.

1701. Montrose-Montrose Natural History and Antiquarian Society.

1702. Newcastle-upon-Tyne-Antiquarian Society.

1703. Literary and Philosophical Society.

 Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne.

1705. North of England Institute of Mining Engineers.

1706. Reading Room.

1707. Tyneside Naturalists' Field Club.

1708. Norwich-Norfolk and Norwich Archeological Society.

1709. Norfolk and Norwich Museum.

1710. Norfolk and Norwich Naturalists' Society.

1711—Nottingham—Free Library and Museum of the Borough of Nottingham.

1712. Nottingham Literary and Philosophical Society.

1713. Nottingham Mechanics' Institution.

1714. Nottingham School of Art.

1715. United Lunatic Asylum.

1716. Oxford—Ashmolean Society.

1717. Bodleian Library.

1718. Magdalen College.

1719. Museum of Natural History.

1720. Oxford Architectural Society.

- 1721. Oxford Free Library.
- 1722. Oxford University Entomological Society.
- 1723. Radeliffe Library.
- 1724. Radcliffe Observatory.
- 1725. Peebles—The Chambers Institution.
- 1726. Penzance—Natural History and Antiquarian Society. 1727. Royal Geological Society of Cornwall.
- 1728. Perth-Murray Royal Institution.
- 1729. Plymouth—Plymouth Institution and Devon and Cornwall Natural History Society.
  - 1730. Plymouth Museum.
- 1731. Richmond—Richmond and North Riding Naturalists' Field Club.
- 1732. Ryde (Isle of Wight)-Philosophical and Scientific Society.
- 1733. St. Albans St. Albans Architectural and Archæological Society.
- 1734. St. Andrews-University Library.
- 1735. Salford—Salford Borough Royal Museum and Library.
  - 1736. Town Council of Salford.
- 1737. Salisbury—Blackmore Museum.1738. Wiltshire Archæological and Natural History Society.
- 1739. Sheffield—Literary and Philosophical Society.
- 1740. Shrewsbury—Shropshire and North Wales Natural History and Antiquarian Society.
- 1741. Southampton-Hartley Institution.
  - 1741a. Ordnance Trigonometrical Survey of Great Britain and Ireland.
  - 1742. South of England Literary and Philosophical Society.
- 1743. Stonyhurst—Stonyhurst College.
- 1744. Swansea—Royal Institution of South Wales. 1745. South Wales Institute of Engineers.
- 1746. Taunton—Somersetshire Archeological and Natural History Society.
- 1747. **Tenby**—Cambrian Archæological Association. 1748. Cambrian Institute.
- 1749. Torquay-Natural History Society.
- 1750. Truro-Royal Institution of Cornwall.

- 1751. Warwick—Warwickshire Natural History and Archæological Society.
- 1752. Whitby-Literary and Philosophical Society.
- 1753. Woolwich—Royal Artillery Institution.

1754. Royal Military Academy.

- 1755. Woolhope-Woolhope Naturalist's Field Club.
- 1756. Wycombe-High Wycombe Natural History Society.
- 1757. York—Yorkshire Agricultural Society.

1758. Yorkshire Philosophical Society.

#### GREECE.

- 1759. Athens—Ethnike Bibliotheke tes Hellados (National Library, Greece).
  - 1760. National University.
  - 1761. Natural History Museum of the University of Athens.
  - 1762. Observatory.
  - 1763. Royal Library.
  - 1764. Société Archéologique d'Athènes.

#### TURKEY.

- 1765. **Belgrad** (Serbia)—Drushtvo srbske Slovessnosti (Society of Serbian Literature).
  - 1766. Praviteljstvena Biblioteka (State Library).
- 1767. Constantinople—His Imperial Majesty the Sultan.
  - 1768. Académie Impériale de Médecine.
  - 1769. American College.
  - 1770. Anjuman i Danish (Society for Advancement of Turkish Literature).
  - 1771. Bureau de Statistique.
  - 1772. Gazette Médicale d'Orient.
  - 1773. Hellenic Philological Society of Constantinople.
  - 1774. Jemiyet Ilamiyeh Osmoniyeh (Ottoman Scientific Society).
  - 1775. Société Orientale de Constantinople.

#### AFRICA.

- 1776. Alexandria-Institut Égyptienne.
- 1777. Algiers-Bibliothèque de la Ville d'Alger.

1778. École de Médecine et de Pharmacie d'Alger (Université de France).

1779. Société d'Agriculture d'Alger.

1780. Société Algérienne de Climatologie, Sciences Physiques et Naturelles.

- 1781. Cape Town—Agricultural Society.
  - 1782. Royal Observatory.

1783. South African Museum.

1784. South Africa Public Library.

- 1785. Constantine—Société Archéologique de la Province de Constantine.
- 1786. Grand Cairo—Bibliothèque Centrale.

1787. The Egyptian Society.

- 1788. Liberia—Government Library.
- 1789. Mauritius-Royal Society of Arts and Sciences. 1790. Société d'Histoire Naturelle de l'Isle Maurice.

- 1791. Port Louis-Meteorological Society of Mauritius.
- 1792. St. Helena-Magnetic and Meteorological Observatory. 1793. St. Helena Library.

#### ASIA.

- 1794. Allahabad—Mission College.
- 1795. Batticotta (Ceylon)—Jaffna College.
- 1796. Batavia-Bataviaasch Genootschap van Kunsten en Wetenschappen.
  - 1797. Geneeskundige Vereeniging in Nederlandsch-Indië (Medical Association).
  - 1798. Koninlijke Naturkundige Vereeniging in Nederlandsch-Indië.
  - 1799. Nederlandsch-Indische Maatschappij van Nijverheid en Landbouw (Industrial Society).
- 1800. Beirut-Syrian Protestant College.
- 1801. Benares-Sanscrit College.
- 1802. Bombay-Bombay Government.

1803. Bombay Mechanics' Institution.

- 1804. Bombay University.
- 1805. Geographical Society.
- 1806. Government Central Museum.
- 1807. Magnetical and Meteorological Observatory.
- 1808. Royal Asiatic Society (Bombay Branch).
- 1809. Caloutta—Asiatic Society.
  - 1810. Agricultural and Horticultural Society of India.
  - 1811. Geological Survey of India.
  - 1812. Indian Medical Gazette.
  - 1813. Medical and Physical Society.
  - 1814. Meteorological Office.
  - 1815. Museum.
- 1816. Colombo-Royal Asiatic Society (Ceylon Branch).
- 1817. Dehra Doon-Great Trigonometrical Survey of India.
- 1818. Hong Kong-Royal Asiatic Society (China Branch).
- 1819. Kurrachee-General Library and Museum.
- 1820. Madras-Literary Society.
  - 1821. Madras Museum.
  - 1822. Madras Observatory.
- 1823. Manilla-Observatorio Meteorologico del Ateneo Municipal.
  - 1824. Royal Economical Society of the Philippine Islands.
- 1825. Neilgherries-Public Library.
- 1826. Rourkee—Thomason College of Civil Engineering.
- 1827. Shanghai—Royal Asiatic Society of China (North China Branch).
- 1828. Yeddo-Emperor of Japan.

## AUSTRALIA.

- 1829. Adelaide—Adelaide Philosophical Society.
  - 1830. Astronomical Observatory.
  - 1831. Government of South Australia.
- 1832. Brisbane (Queensland)—Government Meteorological Observatory.
- 1833. Emerald Hill—(Victoria)—Mechanics' Institute.
- 1834. Hobarton (Tasmania)—Magnetic and Meteorological Observatory.
  - 1835. Mechanics' Institute.

1836. Royal Society of Tasmania.

1837. Tasmanian Public Library.

1838. Launceston (Tasmania)—Launceston Public Library.
1839. Mechanics' Institute and School of Arts.

1840. Melbourne—Acclimatisation Society of Victoria.

1841. Botanic Garden.

1842. Government of Victoria.

1843. Melbourne Observatory.

1844. Mining Department.

1845. National Museum of Victoria.

1846. Natural History Society.

1847. Public Library.

1848. Royal Society of Victoria.

1849. University of Melbourne.

1850. Sydney-Agricultural Society of New South Wales.

1851. Government Observatory.

1852. Philosophical Society of New South Wales.

1853. Public Museum.

1854. University of Sydney.

## NEW ZEALAND.

1855. Auckland-Auckland Institute.

1856. U. S. Consul.

1857. Christchurch-Canterbury Museum.

1857b. Geological Survey of the Province of Canterbury.

1858. Philosophical Institute of Canterbury.

1859. Nelson—Nelson Association for the Promotion of Science and Industry.

1860. Nelson Institute.

1861. Otaga-Otaga Institute.

1862. Wellington—New Zealand Institute.

1863. Parliamentary Library.

1864. Wellington Philosophical Society.

1865. Westland Naturalists' and Acclimatization Society.

#### POLYNESIA.

1866. Honolulu (Sandwich Llands)—Royal Hawaiian Agricultural Society.

# AMERICA (exclusive of British America).

1867. Bogota-Republic of Colombia.

1868. Sociedad de Naturalistas Columbianos.

- 1869. Buenos Aires-Académie des Sciences.
  - 1870. Instituto Histórico Geográfico del Rio de la Plata.
  - 1871. Museo Publico de Buenos-Aires.
  - 1872. Sociedad Palsoontologica de Buenos-Aires.
  - 1873. Sociedad Rural Argentina.
  - 1874. Statistical Bureau.
- 1875. Caracas (Venezuela)—Sociedad de Ciencias Fiscias y Naturales de Caracas.
  - 1876. Sociedad Economica de Amigos del Pais.
- 1877. Cordova (Argentine Republic)—Observatorio Nacional Argentino.
- 1878. Chuquisaca (Bolivia)—University.
- 1879. Georgetown (British Guiana)—Observatory.
  - 1880. Queen's College.
  - 1881. Royal Agricultural and Commercial Society.
- 1882. Guatemala (Guatemala)—Sociedad Economica de Amigos del Pais.
- 1883. Habana (Cuba)—Inspeccion General de Telegrafos.
  - 1884. Observatorio Magnético y Meteorológico del Real Colegio de Belen.
  - 1885. Real Academia de Ciencias Médicas, Fiscias y Naturales de la Habana.
  - 1886. Real Observatorio Fisico-Meteorológico de la Habana.
  - 1887. Real Sociedad Económica de la Habana.
  - 1888. Real Universidad de la Habana.
- 1889. Kingston (Jamaica)—Royal Society of Arts of Jamaica.
- 1890. Lima (Peru)—National Library.
  - 1891. Statistical Bureau.
  - 1892. University.
- 1893. Mexico (*Mexico*)—Colegio de Minerea. 1894. El Museo Nacional.

- 1895. Escuela de Agricultura.
- 1896. Mexican Government.
- 1897. Sociedad Humboldt.
- 1898. Sociedad Médica.
  - 1899. Sociedad Mexicana de Geografia y Estadistica. 1900. Sociedad Mexicana de Historia Natural.
- 1901. Paramaribo (Surinam) Surinaamsche Koloniale Bibliotheek.
- 1902. Port of Spain (Trinidad)—Scientific Association of Trinidad.
- 1903. Quito (Ecuador)—Observatorio del Colegio Nacional.
- 1904. Rio Janeiro (Brazil)—Emperor of Brazil.
  - 1905. British Library.
  - 1906. Instituto Historico, Geographico e Ethnographico do Imperio do Brazil.
  - 1907. Nautical Observatory.
  - 1908. Royal Geographical Society.
  - 1909. Royal Museum. 1910. Sociedad Auxiliadora de Industria Nacional.
- 1911. San Josè (Costa Rica)—University of Costa Rica.
- 1912. Santiago (Chile)—Academia Militar.
  - 111ago (*Chile)*—Academia Militar. 1913. Biblioteca Nacional.
  - 1914. El Plano Topographico.
  - 1915. Ministro de Instruccion Publico.
  - 1916. Museo Nacional.
  - 1917. Observatorio Nacional de Santiago.
  - 1918. Sociedad de Historia Natural.
  - 1919. Universidad de Chile.

I		
		1
•		

# SYSTEMATIC INDEX

# LIST OF FOREIGN CORRESPONDENTS

# SMITHSONIAN INSTITUTION.

1.	Academies	of	Science.	See	8.	Agricultur
	Science.					and Rural

#### 2. Acclimation.

- 124. Moscow. (Soc. Acclimat. Plants and Animals.) 6.
- 323. Berlin. Akklimatisations-Ver. 15.
- 1183. Paris. Soc. d'Acclimatation. 41.
- 1840. Melbourne. Acclimat. Soc. 61.
- 3. Acclimation and Agriculture. 1362. Palermo. Soc. di Acclimazione e di Agricol. 46.
- 4. Actuaries. See Statistics.
- 5. Admiralty. See Naval Affairs.
- 6. Æronautics.
- 1565. London. Æronautical Soc. 52.
- 7. Agents Smithsonian Institution.
  - 11. Stockholm. K. S. Vetens. Ak. 1.
  - 29. Christiania. K. N. F. Universitetet. 2.
  - 54. Copenhagen. K. D. Vid. Selsk. 3.
  - 229. Amsterdam. Frederic Müller. 11.
  - 629. Leipzig. Dr. Felix Flügel. 25.
- 1142. Paris. Gustave Bossange. 40.
- 1322. Milan. R. I. Lomb. di Scienze, etc. 45.
- 1432. Madrid. R. Acad. di Sciencias. 45.
- 1553. London. William Wesley. 52.

- e (including Forest l Economy). See also Section 8 to 15.
- 14. Stockholm. R. Acad. of Agricul. 1.
- 56. Copenhagen. Soc. of Rural Econ. 8.
- 107. Lebedjan. Soc. of Rural Economy. 5.
- 117. Moscow, Imp. Soc. of Rural Roon. 6.
- Petroffsky, Agric. Acad. 6.
- 141. Odessa. Soc. Rural Economy of S. Russia. 7.
- 184. St. Petersburg. Forest Academy. 9.
- Agronom. Inst. 10.
- 289. Zwolle. Friend of the Agricult. 14. 292. Germany. Ver. Südd. Forstwirthe. 14.

  - Vers. D. Land. Forstw. 14.
- 297. Agram. K. K. Landwirthsoh. Ges. 14.
- 310. Arolsen. Landwirthsch. Verein. 15.
- 312. Augsburg. Landwirthsch. Verein. 15.
- 341. Berlin. Landes-Oekonom. Colleg. 16. 362.
- Landwirths. Centralblat. 16.
- 380. Bonn. Landwirths. Central-Ver. 17.
- 399. Bremen. Landwirthsch. Verein. 18.
- 405. Breslau. Landwirth, Central-Ver. 18. 412. Bromberg. Landwirths. Cen. Ver. 18.
- 413. Brünn. K. K. Ackerbau-Nat. Landeskunde. 18.
- 422. Celle. Kön. Landwirths. Ges. 18.
- 427. Gernowitz. Ver. für Landesk. 18.
- 428. Danzig. Hauptverein preuss. Landwirthe. 18.
- Balt. Ver. Landwirths. 20. 468. Eldena.
- K. Landwirths. Akad. 20. 470.
- 500. Görtz. K. K. Ackerbau Gesells. 21.

- 520. Graz. K. K. Landwirthsch. Ges. 21, 1367. Pesaro. Accad. Agraria. 47.

- Akademie. 23. 570. Innsbruck. K. K. Landwirth. Ges. 23. 1422.
- Zeitschrift für Deut. Landw. 23.
- 582. Karlsruhe. Centralstelle für die Landwirthschaft. 23.
- 590. Kassel. Landwirth. Central-Ver. 23.
- 598. Kiel. Landwirths. Gen. Ver. 24.
- 606. Klagenfurt. Landwirths. Ges. 24.
- 613. Königsberg. Landwirths. Cent. 24. 625. Laibach. Landwirthschaft. Ges. 24.
- 637. Leipzig. Landwirths. Kreisverein. 25. 655. Liegnitz. Landwirthschaft. Ver. 25.
- 657. Linz. K. K. Landwirthschaft-Ges. 25.
- 693. München. Landwirthschaft. Ver. 26. 698. Münster. Landw. Provinc. Ver. 27.
- 704. Neu Titschin. Landwirths. Ver. 27. 736. Potsdam. Landwirths. Prov. Ver. 28.
- 763. Salzburg. K. K. Landwirths. Ges. 29.
- 770. Sigmaringen. Ver. zur Beförderung Landwirthschaft. 29.
- 773. Sondershausen. Ver. zur Beförderung der Landwirths. 29.
- 788. Stuttgart. K. Centralstelle für die Landwirthschaft. 29.
- 803. Tübingen. Landwirthschaft. Ver. 30. 807. Weiheustephan. Landwirthschaftl.
- Central-Schule. 30. 826. Wien. Landwirthschafts-Ges. 31.
- 852. Wiesbaden. Ver. Nassau. Land- und Forstwirthe. 31.
- 903. Lausanne. Soc. d'Agric. Suisse Romande. 83.
- 963. Brussels. Soc. Centr. d'Agricult. 34. 1016. Namur. Soc. Agricole et Forest. 36.
- 1074. Bourges. Soc. d'Agricult. 38.
- 1092. Dijon. Soc. d'Agricult. et d'Industrie
- Agricole. 38. 1119. Marseilles. Soc. du Dép. d'Agric. 39.
- 1127. Montpellier. Messager Agricole. 40.
- 1129. Soc. Centrale d'Agriculture. 40.
- 1165. Paris. Journal d'Agric. pratique. 41. Soc. Imp. Centrale d'Agric. 42.
- Soc. d'Agriculture de la 1250. Valence. Drôme. 43.
- 1267. Bologna. Soc. Agraria. 44.
- 1274. Florence. Accad. Econ. agraria. 44.

- 513. Göttingen, Jour. für Landwirths. 21. | 1326. Milano. Soc. Agrar. di Lombard. 45.
  - Landschaftlich. Joanneum. 21. 1384. Turin. Accad. di Agricoltura. 47.
- 529. Gumbinnen. Landw. Centr. Ver. 22. 1397. Udine. Associazione Agraria. 47.
- 567. Hohenheim. K. Land- und Forstw. 1415. Lisbon. Instit. R. de Agricultura e Veterin. 48.
- Soc. R. de Agricol. 48. 574. Jena. Landwirthschaftliches Inst. 23. 1446. Bath. Agric. Soc. 49.
  - 1451. Belfast. Chemico-Agric. Soc. 49.
  - 1477. Cirencester. R. Agricult. Col. 50.
  - 1506. Edinburgh. Highl. Agric. Soc. 51. 1536. Keighley. Keighley Agricult. Soc. 52
  - 1650. London. R. Agric. Soc. 55. 1757. York. Agricult. Soc. 58.
  - 1779. Algiers. Société d'Agriculture. 59. 1781. Cape Town. Agricultural Soc. 59.
  - 1850. Sidney. Agricult. Soc. 61. 1873. Buenos Ayres. Soc. Rural Argent. 62.
  - 1866. Honolulu. R. Agricult. Soc. 62. 1895. Mexico. Escuela de Agricultura. 63.
  - 9. Agriculture, Arts, and Commerce.
  - 14. Stockholm. R. Acad. of Agricult. 10.
  - 513. Göttingen. Journ. für Landwirths. 21. 1044. Angouleme. Soc. d'Agricult., Arts et
  - Commerce. 37. 1078. Caen. Soc. Agric. et Commerce.
  - 1113. Lyon. Soc. de l'Agric., Hist. Nat. et Arts Utiles. 39.
  - 1359. Palermo. R. Istituto d'Incoragg. di Agricol. Arti e Manifatt. 46.
  - 1405. **Verona**. Accad. d'Agricol. Comm. e Arti. 48.
  - 1881. Georgetown. R. Agricult. Commercial Soc. 62.
  - 10. Agriculture and Horticulture.
  - 261. Hoorn. Cercle Agric. et Hortic. 13. 925. Zürich. Ver. für Landwirth. Garten-
  - bau. 33. 987. Ghent. Soc. R. d'Agricult. et de Botanique. 35.
  - 1136. Nice. Soc. Centr. d'Agricult., d'Horticult. et d'Acclimatation. 40.
  - 1810. Calcutta. Agricult. Horticult. Soc. 60.
  - 11. Agriculture. See Acclimation.
  - 12. Agriculture, Arts, Belles-Lettres, and Science. See also Science.

- 13. Agriculture, Arts, Industry, and Science. See Science.
- 14. Agriculture, Arts, Science.

  See Science.
- 15. Agriculture, Commerce, and Science. See Science.
- 16. Agriculture and Veterinary Science. See Veterinary.
- 17. Alpine Club. See Geography.
- 18. Apothecaries. See Pharmacy.
- 19. Anatomy. See also Medicine and Surgery.
- 358. Berlin. Archiv für path. Anat. 16.
- 961. Brussels. Soc. Auatomo-patholog. 34.
- 1266. Bologna. Scuola Anatom. 44.
- 1469. Cambridge. Journ. Anat. Phys. 50.

## 20. Animals; Protection of.

- 306. Altona. Thierschutz-Verein. 15.
- 369. Berlin. Thierschutz-Verein. 17.
- 461. Dresden. Thierschutz-Verein. 19.
- 548. Hamburg. Thierschutz-Verein. 22.
- 848. Wien. Thierschutz-Verein. 31.
- 976. Brussels. R. Soc. prot. Animaux. 35.
- 21. Anthropology. See Ethnology.
- 22. Antiquities and Archæology in General.
  - 2. General. Cong. Intern. d'Arch. préhist. 1.
  - 28. Christiania. Soc. for the Pres. of Norw.
    Antiquities. 2.
  - 36. Antiquaria Soc. 2.
  - 5S. Copenhagen. Soc. of North, Antiquaries. 3.
  - 120. Moscow. Archeological Soc. 6.
  - 133. Narwa. Archaeological Soc. 7.
  - 159. St. Petersburg. Archæ. Com. of the Min. of Pub. In. 8.
  - 164. I. Archæol. Com. 8.
  - 165. I. Archæol. Soc. 8.
  - 214. Tiflis. Caucas. Soc. Rur. Economy. 10. 1185.

- 218. Vilna. Archæol. Commiss. 10.
- 387. Bonn. Ver. Alterthumsfreunde. 17.
- 455. Dresden. K. Ver. für vater. Alterthümer. 19.
- 486. Preiberg. Alterthums-Ver. 20.
- 532. Halle. Landwirths. Central-Ver. 22.
- 595. Kiel. Ges. Erhaltung vaterl. Alterthümer. 24.
- 561. Heidelberg. Landwirths. Bez-Ver. 22.
- 568. Hohenleuben. Alterthums. Verein. 23.
- 581. Karlsruhe. Bad Alterthums-Ver. 23.
- 663. Lüneburg. Alterthums-Ver. 26.
- 675. Meiningen. Alterthumsforsch. Ver. 26.
- 779. Strassburg. Soc. pour la Conserv. des Monuments histor. d'Alsace. 29.
- 794. Stuttgart. Alterthums-Ver. 30.
- 873. Basel. Ges. vaterländische Alterthümer. 32.
- 896. Geneve. Soc. d'Hist. et d'Archéologie.
- 918. Zürich. Ges. für Vaterländ. Alterthümer. 33.
- 926. Antwerp. Acad. d'Archéologie. 33.
- 958. Brussels. Musée R. d'Antiq. d'Armures et d'Artill. 34.
- 996. Liege. Institut Archéol. Liégois. 35.
- 1010. Mons. Cercle Archéologique. 36.
- 1017. Namur. Soc. Archéologique. 36.
- 1020. St. Nicolas. Cercle Archéolog. 36.
- 1022. Termonde. Cercle Archéolog. de la Ville. 36.
- 1039. Amiens. Soc. des Antiquaires. 37.
- 1045. Angouleme. Soc. Archéologique. 37.
- 1047. Arles. Commission Archéologique. 37.
- 1051. Avignon. Soc. Archéologique. 37.
- 1059. Beziers. Soc. Archéologique. 37.
- 1064. Bordeaux. Commiss. Monuments et Docum. hist. 38.
- 1079. Caen. Soc. des. Antiq. de Normandie.
- 1085. Chalons-sur-Saone. Soc. Archéol. 38.
- 1086. Chartres. Soc. Archéol. d'Eure et Loire. 38.
- 1091. Dijon. Commiss. Archéol. 38.
- 1108. Limoges. Soc. Archéologique. 39.
- 1121. Mayenne. Soc. Archéologique. 39.
- 1128. Montpellier. Soc. Archéolog. 40.
- 1141. Orleans. Soc. Archéol. 40.
- I. Archsol. Com. 8. 1155. Paris. Comité d'Archéologie Americaine. 41.
  - 1185. Soc. des Antiquaires. 41.

- 1217. Poitiers. Soc. des Antiquaires de 26. Antiquities and History. l'Ouest. 42.
- 1220. Rambouillet. Soc. Archéologique. 42. 1225. Rennes. Soc. Archéol. 42.
- 1235. Saint-Omer. Société des Antiquaires. 43.
- 1237. Senlis. Comité Archéologique. 43.
- 1238. Sens. Soc. Archéologique. 43.
- 1254. Vesoul. Commiss. d'Archéologie. 44.
- 1346. Naples. Accad. Breolan. Archeol. 46. 1372. Rome. Accad. Archeologia. 47.
- 1375. British Archeological Soc. 47.
- 1445. Aylesbury. Architect. and Archmol. Soc. 49.
- 1448. Bedford. Architectural and Archæol.
- Soc. 49. 1464. Bury St. Edmunds. Inst. d'Archeol.
- and Nat. Hist. 49. 1465. Cambridge. Antiquarian Soc. 50.
- 1475. Chester. Architect. Archmolog. Soc. 50.
- 1517. Edinburgh. Soc. of Antiquaries. 51.
- 1525. Glasgow. Archeological Soc. 51. 1533. Huddersfield. Archaol. Typograph.
- Assoc. 51. 1547. Lewes. Archaeolog. Soc. 52.
- 1575. London. Brit. Archmol. Assoc. 53. 1629. Archaeolog. Soc. 54.
- Archæol. Inst. 55. 1651.
- 1672. Soc. of Antiquaries. 55. 1680. Surrey Archael. Soc. 55.
- 1690. Maidstone. Archeological Soc. 56. 1702. Newcastle-upon-Tyne. Antiquarian
- Soc. 56. 1708. Norwich. Archaelog. Soc. 56.
- 1747. Tenby. Archeol. Association. 57.
- 1764. Athens. Soc. Archéologique. 58.
- 1785. Constantine. Soc. Archéolog. 59.
- 23. Antiquities and Art. 805. Ulm. Ver. Kunst und Alterthum. 30.
- 24. Antiquities and Geography. 1434. Madrid. R. Acad. Arqueolog. y Geografica. 49.
- 25. Antiquities, Belles-Lettres, and History.
  - 16. Stookholm. Royal Acad. of Belles- 1751. Warwick. Nat. Hist. and Archaelog. Lettres, Hist. and Antiq. 1.

- 115. Moscow. Imp. Soc. of R. History and Antiquities. 6.
- 142. Odessa. Hist. and Antiq. Soc. 7. 155. Riga. Hist. and Antiq. Soc. of Russ.
- Baltic Prov. 8. Ges. Geschichte Alter-298. Agram.
- thümer. 14. 301. Allenburg. Ver. der D. Ges. Alter. 14.
- 302. Altenburg. Geschichts Alterthums Ges. 15.
- 769. Schwerin. Ver. Meckl. Gesch. und Alterthumskunde. 29.
- 776. Stade. Ver. für Gesch. und Alterthumer. 29.
- 778. Stettin. Ges. für pommersche Gesch. und Alterthumskunde. 29.
- 812. Wernigerode. Ver. für Gesch. Alterthumskunde. 30.
- 850. Wiesbaden. Ver. für Nassau. Gesch. u. Alterthumskunde. 31.
- 1103. Langres. Soc. Hist. et Archéolog. 89. 1490. Dublin. Irish Archaelog. and Celtic Soc. 50.
- 1539. Kilkenny. R. Hist. Archeological Association. 52.
- Antiquities, History, and 27. Philology.
- 262. Leeuwarden. Soc. of History, Antiquity, and Philology. 13.
- 28. Antiquities and Natural Philology.
- 1471. Devises. Archæol. Nat. Hist. Soc. 50. 1447. Bath. Nat. Hist. and Antiq. Field Club. 49.
- 1478. Cork. Cuvierian and Archael. Soc. 50. 1499. Dumfries. Nat. History and Antiqua-
- rian Soc. 51. 1540. Kirkwall. Orkney Antiquarian and
- Nat. Hist. Soc. 52. 1701. Montrose. Montrose Nat. Hist. Anti-
- quarian Soc. 56. 1726. Pensance. Nat. Hist. and Antiquarian Soc. 57.
- 1738. Salisbury. Wiltshire Archaelog. and Nat. Hist, Soc. 57.
- Soc. 58.

- 29. Aguaria.
- 325. Berlin. Berliner Aquarium. 15.
- 30. Archæology. See Antiquities.
- 31. Archæology, Arts and Sciences. See Science.
- 1052. Avranches. Soc. d'Archéol. Littérat. Soi. et Arts. 37.
- 1345. Naples. R. Accad. di Archeol. Lettere e Belle Arti. 46.
- 32. Architecture.
- 233. Amsterdam. Soc. for Encouragement of Architecture. 11.
- 349. Berlin. K. P. Technische Bau-Deputation. 16.
- 840. Wien. Ingenieur- Architect. Ver. 31.
- 1186. Paris. Soc. des Architectes. 41.
- 1568. London. Architect. Publication Soc. 52.
- 1660. Roy. Instit. of Brit. Architects. 55.
- 1720. Oxford. Architectural Society. 56.
- 1733. St. Albans. Architect. and Archæol. Soc. 57.
- 33. Architecture and Engineering.
- 554. Hannover. Architect. und Ingenieur-Ver. 22.
- 1312. Milan. Collegio degli Ingegnere ed Architetti. 45.
- 1313. Giornale dell' Ingegnere, Architetto ed Agronomia. 45.
- 1391. Turin. R. Scuola d'applicazione per gli Ingegneri. 47.
- 1612. London. Instit. of Naval Architects. 54.
- 34. Archives of State Records. See Public Records.
- 35. Army Corps and Staff. See Military Science.
- See Antiquities, Fine 36. Art. Arts, Literature.
- 37. Art Museums. See Museums. 1012. Mons. Soc. Bibliophiles Belges. 36.

- 38. Arts and Literature.
- 108. Mitaw. Courland Soc. of Literat. and Art. 5.
- 471. Emden. Ges. Kunst Alterthümer. 20.
- 927. Antwerp. Acad. Beaux-Arts. 33.
- 942. Bruges. Cercle Artist. et Littéraire. 34.
- 951. Brussels. Cercle Artist. et Littéraire. 31.
- 988. Ghent. Soc. R. des Beaux-Arts et de Littérature. 85.
- 1015. Namur. Cercle Artistique et Littéraire. 36.
- 39. Arts. See Agriculture, Belles-Lettres, Sciences, Technology.
- 40. Artillery and Engineering. See Military Academies, etc.
- 1753. Woolwich. R. Artillery Instit. 58.
- 41. Asiatic Societies. See Oriental Societies.
- 42. Associations, Scientific. See Science.
- 43. Astronomy, Societies.
- 630. Leipzig. Astron. Ges. 25.
- 1653. London. R. Astronomical Soc. 55.
- 44. Astronomy. See Observatories, Hydrography, Longitudes.
- 45. Baths and Thermal Waters.
- 474. Ems. Balneologische Zeitung. 20.
- 46. Belles-Lettres.
- 1287. Florence. Nuova Antologia. 45.
- 1427. Barcelona. R. Acad. de Buenas Letras. 48.
- 47. Belles-Lettres. See Antiquities, Science.
- 48. Belles-Lettres and Sciences. See Science, Bibliography.

- 49. Biology. See Natural History. | 755. Regensburg. K. Botanische Ges. 28.
- 1188. Paris. Soc. de Biologie. 41.
- 50. Blind, The. See also The Deaf and Dumb.
- 183. St. Petersburg. Inst. for the Blind. 9.
- 403. Breslau. Blinden-Anstalt. 18.
- Blinden-Unterrichts-Anstalt. 407. 18.
- 414. Brünn. Blinden-Erziehungs-Inst. 18.
- 450. Dresden. Blinden-Anstalt. 19.
- 489. Freiburg. Blinden-Austalt. 20.
- 492. Friedberg. Blinden-Anstalt. 20.
- 540. Hamburg. Blinden-Austalt. 22.
- 594. Kiel. Blinden-Anstalt. 24.
- 615. Königsberg. Ver. für Blinden-Unter richt. 24.
- 847. Wien. Verein zur Versorgung und Beschäftigung erwachsener Blinden. 31.
- 901. Lausanne. Asile des Avengles. 33.
- 51. Booksellers and Publishers.
- 388. Braunschweig. F. Vieweg und Sohn. 17.
- 633. Leipzig. F. A. Brockhaus. 25.
- 1682. London. Trübner & Co. 55.
- 52. Botanical Gardens.
  - 71. Copenhagen. Bot. Garden University. 4.
- 166. St. Petersburg. Imp. Botan. Garden. 6.
- 686. München. K. Botanischer Garten. 26.
- 1350. Naples. Orto Botanico. 46.
- 1537. Kew. R. Botanic Gardens. 52.
- 1841. Melbourne. Botanic Garden. 61.
- 53. Botany, Agriculture, Botanical Gardens. See also Horticulture, Museums.
  - 49. Copenhagen. Botan. Soc. 3.
- 272. Leiden. Assoc. for the Flora of Holland. 13.
- 324. Berlin. Annal. Botan. System. 15.
- 326. Botanischer Verein, etc. 15.
- 360. Jahrbuch, für wiss, Botan, 16.
- 363. Linnæa. 16.
- 536. Halle. Botanische Zeitung. 22.
- 642. Leipzig. Jahrbücher Botanik. 25.

- 972. Brussels. Soc. R de Botanique. 35.
- 1189. Paris. Soc. Botanique de France. 41.
- 1288. Florence. Nuova Giornale Botan. 45.
- 1501. Edinburgh. Botanical Soc. 51. 1654. London, R. Botanic Soc. 55.
- 54. Botany and Zoology.
  - 90. Helsingfors. Fauua, Flora Fennica. 5.
- 836. Wien. Zoologisch-Botan. Ges. 31.
- 55. Charts. See also Geography.
- 919. Zürich. Karten Verein. 33.
- 1192. Paris, Soc. de l'Ecole des Chartes. 41.
- 56. Chemistry.
- 201. St. Petersburg. Russ. Chem. Soc. Univers. 10.
- 328. Berlin. D. Chemische Ges. 15.
- 1191. Paris. Soc. Chimique. 41.
- 1484. Dublin. Chemical Soc. of Dublin. 50.
- 1557. Liverpool. Chemists' Assoc. 52.
- 1584. London. Chemical News. 53.
- 1585. Chemical Soc. 53.
- 1586. Chemist and Druggist. 53.
- 57. Chemistry and Agriculture. See Agriculture.
- 58. Chirurgy, See Medicine and Surgery.
- 59. Commerce. See also Science, Industry, and Trade. See Academy, Agriculture.
- 296. Agram. Handels Gewerbekammer. 14.
- 1063. Bordeaux. Chambre de Comm. 37.
- 60. Crowned Heads. See Governments, etc.
- 61. Culture. See Mental Culture.
- 62. Deaf and Dumb, The. See also The Blind.
- 143. Odessa. Deaf and Dumb Inst. 7.
- 172. St. Petersburg. Imp. Inst. for Deaf and Dumb. 8.
- 253. Groningen. Inst. Deaf and Dumb. 12.

- 276. Rotterdam. Inst. Deaf and Dumb. 13. | 1882. Guatemala.
- 473. Emden. Taubstummen-Anst. 20.
- 493. Friedberg. Taubstummen-Anst. 20.
- 648. Leipzig. Taubstummen-Austalt. 25.
- 674. Meersburg. Taubstummen-Anst. 26.
- 692. München. K. Taubstummen-Anst. 26.
- 872. Aaran. Blinden eu Taubstummen-Anstalt. 32.
- 916. Yverdon. Inst. des Sourds Muets. 33.
- 1300. Genoa. R. Inst. dei Sordo-Muti. 45.
- 1323. Milan. R. Inst. dei Sordo-muti. 45.
- 1473. Doncaster. Yorkshire Inst. for Deaf and Dumb. 50.
- 1483. Dublin. Instit. for Deaf and Dumb. 50.

  1489. Instit. for the Deaf and Dumb.
- 63. Dumb. See Deaf and Dumb.
- 64. Dentistry.
- 706. Nurnberg. Ver. D. Zahnärzte. 27.
- 1638. London. Odontological Society. 54.
- East Indian Co. See Libraries.
   London.
- 66. Economy (Public Welfare).
  - 9. Lund. Journal of Political Economy and Literat. 1.
  - 81. Dorpat. K. L. Œkonomische Soc. 4.
  - 93. Kasan. Imp. Economical Soc. 5.
- 180. St. Petersburg. Imp. Free Eco. Soc. 9.
- 409. Breslau. Ges. für vaterländ. Cult. 18.
- 454. Dresden. K. Oekonom. Ges. 19.
- 573. Jauer. Oekon.-patriot. Ges. 23.
- 614. Königsberg. Physik. Œcon. Ges. 24.
- 741. Prag. Patriotish-ökonom. Ges. 28.
- 749. Premslaff. Pommers. Oekon. Ges. 28.
- 759. Rostock. Patriotischer Ver. 28.
- 861. Zara. Soc. Econ. di Dalmazia. 32.
- 867. Switzerland. Gemeinnütz. Ges. 32.
- 874. Basel. Ges. Beforderung des Guten und Gemeinnützigen. 32.
- 883. Bern. Oekom. Ges. 32.
- 895. Genève. Soc. d'Utilité Publique. 33.
- 953. Brussels. Commiss. des Annales des Travaux Publics. 34.
- 1437. Valencia. R. Sociedad Económica. 49.
- 1824. Manilla. R. Economical Soc. 60.
- 1876. Caracas. Soc. Econ. Amig. del Pais. 62.

- 1882. Guatemala. Soc. Econom. Amigos del Pais. 62.
- 1887. Habana. R. Sociedad Económica. 62.
- 67. Economy and Physics. See Economy.
- 68. Economy, Rural. See Agriculture.
- 69. Education. Also Public Instruction.
- 198. St. Petersburg. Pedagogical Soc. 10.
- 596. Kiel. Schul-Zeitung. 24.
- 869. Switzerland. Lehrverein. 32.
- 870. Ver. Schweiz. Gymnasiallehrer. 32,
- 1332. Milano. Soc. Pedagocica Ital. 46.
- Engineering. See also Architecture, Artillery, Mechanics.
  - 82. Dorpat. Scientific Esthonian Soc. 4.
- 181. St. Petersburg. Inst. Engin. of Pub. Works. 9.
- 182. Civil Engin. Inst. 9.
- 243. The Hague. R. Inst. of Rugineers. 12.
- 370. Berlin. Ver. Deutscher Ingenieure. 17.
- 459. Dresden, Ingenieur-Verein. 19.
- 993. Liége. Assoc. des Ingenieurs. 35.
- 1145. Paris. Annal. Ponts et Chaussés. 40.1205. Soc. des Ingen. Civils. 42.
- 1351. Naples. R. Scuola d'applicazione per gli Ingegneri. 46.
- 1429. Madrid. Accad. Especial de Ingenieros. 48.
- 1457. Birmingham. Instit. of Mechanical Engineers. 49.
- 1488. Dublin. Instit. of Civil Engineers. 50.
- 1528 Glasgow. Instit. of Engineers. 51.
- 1588. London. Civil and Mech. Engineers Soc. 53.
- 1589. Corps of R. Engineers. 53.
- 1611. Inst. of Civil Engineers. 54.
  - 1613. Instit. Hydron. and Naut. Engineers. 54.
  - 1675. Soc. of Engineers. 55.
  - 1745. Swansea. South Wales Instit. of Engineers. 57.
  - 1826. Roorkee. Coll. of Civil Engineering.

### 71. Engineering, Mining.

- 203. St. Petersburg. Staff of Mining Engiueers. 10.
- 404. Breslau. K. Ober Berg-Amt. 18.
- 487. Freiberg. K. Bergakademie. 20.
- 531. Halle a. d. Saale. K. Ober-Berg-Amt. 22
- 1011. Mons. Ecole des Mines. 36.1159. Paris. Ecole des Mines. 41.
- 1232. Saint-Etienne. Soc. de l'Industrie Minérale. 43.
- 1705. Newcastle-upon-Tyne. Institute of Mining Rugineers. 56.
- 1844. Melbourne. Mining Department. 61. 1893. Mexico. Colegio de Minerea. 62.

## 72. Entomology.

- 199. St. Petersburg. Entomolog. Soc. 10.
- 265. Leiden. Entomological Soc. 13.
- 333. Berlin. Kntomolog. Ver. 16.
- 777. Stettin. Entomologischer Ver. 29.
- 866. Switzerland. Eutomolog. Ges. 32.
- 966. Brussels. Soc. Entomolog. 35.
- 1177. Paris. Petites Nouvelles Entomologiques. 41.
- 1194. Soc. Entomol. de France. 42.
- 12)3. Florence. Soc. Entomologica. 45.
- 1593. London. Entomological Soc. 53.
- 1594. Eutomologists' Monthly Magazine. 53.
- 1595. Entomologist. 53.
- 1722. Oxford. University Entomol. Soc. 57.

## 73. Ethnology (and Anthropology).

- 116. Moscow. Imp. Society of Friends of Nat. Sci., Anthrop., and Ethnog. 6.
- 266. Leiden. Roy. Ethn. Museum. 13.
- 367. Berlin. Zeitschrift für Ethnologie. 17.
- 490. Preiburg. Archiv. für Anthropol. 20.
- 631. Leipzig. Central-Mus. Völkerkunde. 25.
- 814. Wien, Anthropol. Ges. 30.
- 855. Wurzburg. D. Ges. Anthrop. ethnol. urgesch. 31.
- 1184. Paris. Soc. d'Anthropologie. 41.
- Soc. d'Ethnographie. 42.
- 1279. Florence. Direzione per l'Anthropol. Entolog. 44.
- 1540. Liverpool. Anthropolog. Soc. 52.

- 1564. London. Aborig. Protect. Soc. 52 1597. Ethnological Journal. 53.
- 1567. Anthropological Inst. 52.
- 74. Ethnology, Geography, and Philology.
- 249. The Hague. Roy. Inst. Phil., Geogr., Ethnogr. of D. India. 12.
- 75. Fine Arts. See also Art, Musaum.
- 126. Moscow. Eco. Amat. of Fine Arts. 6.
- 176. St. Petersburg. Imp. Acad. of Fine Arts. 9.
- 226. Warsaw. Soc. for Advanc. F. Arts. 11.
- 235. Amsterdam. R. Acad. of Fine Arts. 12.
- 935. Antwerp. Soc. R. Beaux-Arts. 34.
- 944. Bruges. Soc. Beaux-Arts et Littér. 34.
- 1258. Bergamo. Accad. di Carrara di Belle Arti. 44.
- 1271. Carrara. Accad. R. di Belle Arti, 44.
- 1320. Milan. R. Accad. di Belle Arti. 45.
- 1327. Soc. degli Artisti. 46.
- 1342. Naples. Istituto di Belle Arti. 46. 1374. Roma. British Acad. of Fine Arts. 47.
- 1389. Turin. R. Accad. di Belle Arti. 47.
- 1399. Venice. Accademia di Belle Arti. 47.
- 1512. Edinburgh. Inst. for Rocouragement of Fine Arts. 51.
- 1569. London. Art Union. 53.
- 76. Forest Economy. See Agriculture.
- 77. Gardens, Botanical. See Botanical.
- 73. Gardens, Zoological. See Zoological.
- 79. Geography. See also Charts. Ethnology.
  - 38. Christiania. Tourists' Society. 2.
  - 91. Irkootsk. Geograpical Soc. 5.
- 146. Ornsk. Soc. of Explorers of Western Siberia. 7.
- 147. Orenburg. Section of the Imp Russ. Geograph. Soc. 7.
- 174. St. Petersburg. Imp. Geog. Soc. 9.
- 212. Tiflis. Caucas. Geog. Soc. 10.

314. Augsburg. Ausland. 15. 335. Berlin. Ges. für Erdkunde. 16. 462. Dresden. Verein für Erdkunde. 19. 395. Bremen. Comité Nordpol. Explor. 17. 507. Gotha. Geographische Anstalt. 21. 600. Kiel. Ver. Geogr. Naturwissen. 24. 683. München. Geograph. Ges. 26. 809. Weimar. Geograph. Institut. 30. 820. Wien. Geograph. Ges. 30. 864. Bern. Schweizer Alpenclub. 32. 897. Geneve. Soc. de Géographie. 33. 930. Antwerp. Soc. Belge de Géog. 34. 956. Brussels. Etabliss. Géograph. 34. 1158. Paris. Dépot des Cartes et Plans. 41. 1198. Soc. de Géographie. 42. 1294. Florence. Soc. Geografica. 45. 1387. Turin. Circolo Geografico Italiano. 47. 1657. London. R. Geographical Soc. 55. 1805. Bombay. Geographical Society. 60. 1908. Rio Janeiro. R. Geogr. Soc. 63.

## 30. Geography and History.

- 439. Darmstadt. Ver. für Erdkunde u. verwandte Wissens. 19.
- 592. Kassel. Ver. Hess. Gesch. und Landeskunde. 23.
- 652. Leipzig. Ver. von Freund. der Erdkunde. 25.
- 1870. Buenos Ayres. Inst. Histor. Geog. 62.
  1906. Rio Janeiro. Instituto Hist. Geograph.
  Ethnogr. 63.

#### 81. Geography and Statistics.

- 222. Vilna. Section of Geog. Soc. for N. W. Russia. 11.
- 566. Hermannstadt. Ver.für Landeskunde. 23.
- 1899. Mexico. Soc. Mex. Geogr. y Estadisfica. 63.

# 82. Geology. (Including Mineralogy and Palæontology.)

- 12. Stockholm. Geological Bureau. 1.
- 33. Christiania. Div. des Recherches Geolog. 2.
- 175. St. Petersburg. Imp. Mineral Soc. 9.
- 329. Berlin. D. Geolog. Gessellschaft. 15.
- 438. Darmstadt. Geologischer Verein. 19.
- 448. Dresden. Geinitz. Jahr. Mineral Geol. u. Pal. 19
- 517. Gras. Geognostisch Ver. 21.

- 530. Hall. Ver. Geologisch. 22.
- 723. Pesth. Geolog. Ges. Ungarn. 27.
- 821. Wien. Geolog. Reichsaustalt. 30.
- 1199. Paris. Soc. Géolog. de France. 42.
- 1290. Florence. R. Comitato Geologico. 45.
- 1495. Dublin. R. Geological Soc. 50.
- 1503. Edinburgh. Geological Society. 51.
- 1526. Glasgow. Geological Soc. 51.
- 1542. Leeds. Geolog. and Polyt. Soc. 52
- 1553. Liverpool, Geological Magazine. 52.
- 1554. Geological Society. 52.
- 1600. London. Geological Magazine. 53.
- 1601. Geological Soc. 53.
- 1602. Geologists' Association. 53.
- 1692. Manchester. Geological Society. 56.
- 1727. Penzance. R. Geological Soc. of Cornwall. 57.
- 1811. Calcutta. Geol. Survey of India. 60.
- 1857b. Christohurch. Geolog. Survey of Canterbury. 61.

#### 83. Governments.

- 158. St. Petersburg. The Emperor of Russia. 8.
- 245. The Hague. Government of the Netherlands.
- 322. Berlin. Kaiser von Deutschland. 15.
- 393. Bremen. Bremer Regierung. 17.
- 442. Dresden. Der König von Sachsen. 19.
- 585. Karlsruhe. Badische Regierung. 23.
- 782. Stuttgart. Der König von Würtemberg. 29.
- 813. Wien. Der Kaiser von Oesterreich-Ungarn. 30.
- 879. Bern. Conseil Fédéral Suisse. 32.
- 957. Brussels. Government of Belgium. 34.
- 1315. Milano. Municipio di Milano. 45.
- 1377. Roma. Governo Pontificio. 47.
- 1562. London. The Queen of Great Britain and Ireland. 52.
- 1577. British Government. 53.
- 1736. Salford. Town Council. 57.
- 1767. Constantinople. The Sultan. 58.
- 1802. Bombay. Bombay Government. 59.
- 1828. Yeddo. Emperor of Japan. 60.
- 1831. Adelaide. Gov. of S. Austr. 60.
- 1842. Melbourne. Gov. of Victoria. 61.
- 1867. Bogota. Republic of Colombia. 62.
- 1895. Mexico. Mex. Government. 63.
- 1904. Rio Janeiro. Emperor of Brazil. 63.
- 84. Herbaria. See Museums of Botany.

## 85. History. See also Geography, 1393. Turin. R. Deputazione Sovra gli Studii Antiquities.

- 50. Copenhagen. Historical Journal. 3.
- 200. St. Petersburg. R. Histor. Soc. 10.
- 281. Utrecht. Historical Society. 14.
- 308. Ansbach. Historischer Verein. 15.
- 311. Augsburg. Historischer Verein. 15.
- 316. Baireuth. Historischer Verein. 15.
- 372. Berlin. Ver. Gesch. Mark Brandenburg. 17.
- 466. Elberfeld. Bergischer Gesch. Ver. 20.
- 496. Giessen. Historischer Verein. 21.
- 518. Graz. Historisch. Ver. 21.
- 549. Hamburg. Ver für Hamburg. Gesch. 22.
- 557. Hannover. Histor. Verein. 22.
- 567. Kiel. Ges. für vaterländ. Gesch. 24.
- 602. Klagenfurt. Gesch. Ver. für Kärnten. 24.
- 612. Köln. Hist. Ver. Niederrhein. 24.
- 623. Laibach. Hist. Ver. 24.
- 628. Landshut. Hist. Ver. Niederbaiern. 25.
- 662. Lübeck. Ver. für lübecki. Gesch. 26.
- 684. München, Histor, Ver. Oberbaiern, 26.
- 719. Osnabrück. Historischer Verein. 27.
- 747. Prag. Ver. Gesch. der Deutschen in Böhmen. 28.
- 753. Regensburg. Hist. Ver. 28.
- 774. Speier. Hist. Ver. Rheinbaiern. 29.
- 796. Tettnang. Ver. Gesch. des Bodensees. 30.
- 811. Weinsberg. Hist. Ver. für Franken. 30.
- 856. Würzburg. Hist. Ver. Unterfrank. 31.
- 868. Switzerland. Hist. Ges. (Bern.) 32.
- 868. Fribourg. Soc. d'Hist. 32.
- 904. Lausanne. Soc. d'Hist. de la Suisse Rom. 33.
- 907. Luzern. Histor. Ver. 33.
- 955. Brussels. Commiss. R. d'Hist. 34.
- 967. Brussels. Soc. d'Hist. 35.
- 1056. Bergues. Soc. de la Hist. et des Beaux-Arts. 37.
- 1073. Bourges. Commiss. Hist. 38.
- 1164. Paris. Institut Hist. de France. 41.
- 1196. Soc. Fr. conservation des Monuments Hist. 42.
- 1200. Soc. de l'Hist. de France. 42. Soc. de l'Hist. du Protestant-1201.
- isme. 42. 1233. Saint-Jean-d'Angely. Soc. Hist. 43.
- 1304. Genoa. Soc. di Storia Patria. 45.

- di Storia Patria. 47.
- 1435. Madrid. R. Acad. de la Historia. 49.
- 1555. Liverpool. Hist. Soc. of Laucashire and Cheshire. 52.
- 1599. London. Genealog. and Hist. Soc. 53.

## 86. History. See Antiquities.

- 398. Bremen. Ver. für Gesch. Alterthums. 18.
- 526. Greifswald. Ges. Geschichte und Althumskunde. 21.
- 539. Halle. Gesch. Alterthums-Ver. 22.
- 555. Hannover. Ver. Deutsch. Gesch. Alterthums-Ver. 22.
- 580. Jena. Ver. Gesch. Alterthumskunde. 23.
- 654. Leisnig. Gesch. Alterthums. Ver. 25.
- 668. Mains. Verein zur Erforschung der Rhein, Gesh. Alterth. 26.
- 700. Münster. Ver. für Gesch. und Alterthümer. 27.
- 943. Bruges. Soc. pour l'étude de l'Hist. et des Antiq. 34.
- 1740. Shrewsbury. Nat. Hist. and Antiquarian Soc. 57.
- 1746. Taunton. Archæol. Nat. Hist. Soc. 57.

## 87. History; Museums of. History.

#### 88. History and Jurisprudence.

- 288. Zwolle. Soc. Cultiv. Jurisprudence and Hist. 14.
- 89. History and Philology.
- 168. St. Petersburg. Imp. Histor. Philolog. Inst. 5.

#### 90. History and Statistics.

485. Frankfurt-an-der-Oder. Historisch-Statist. Ver. 20.

#### 91. Homeopathy.

- 962. Brussels. Soc. Med. Homospath. 34. 1207. Paris. Soc. Méd. Homosopathique. 42.
- 1578. London. Brit. Homosopathic Soc. 53.
- 92. Horology. See Watchmaking.

- 93. Horticulture. See also Agri- 97. Hydraulics. culture, Botany.
- 131. Moscow. Russ. Soc. of Friends of Horticulture, 7.
- 138. Odessa. Horticultural School. 7.
- 197. St. Petersburg. Soc. of Russ. Horticuit. 10.
- 304. Altenburg. Pomologische Ges. 15.
- 373. Berlin. Ver. des Gartenbaues in Pr. Staaten. 17.
- 389. Braunschweig. Garten-Verein. 17.
- 396. Bremen. Gartenbau-Verein. 17.
- 431. Darmstadt. Gartenbau-Verein. 19.
- 443. Dresden. Gesells. Flora. 19.
- 469. Eldena. Gartenbau-Verein. 20.
- 476. Erfurt. Gartenbau-Ver. 20.
- 482. Frankfurt. Gesellsch. Flora. 20.
- 501. Görlitz. Gartenbau-Verein. 21.
- 510. Gotha. Thur. Gartenbau-Verein. 21.
- 676. Meiningen. Ver. Pomol.Gartenbau. 26.
- 682. München. B. Gartenbau-Ges. 26.
- 721. Passau. Prakt. Gartenbau-Ges. 27.
- 783. Stuttgart. Garten-Ges. "Flora." 29. 799. Trieste. Garten-Ges. des Litorales. 30.
- 810. Weimar. Ver. Blumistik und Gartenbau. 30.
- 819. Wien. K. K. Gartenbau-Ges. 30. 936. Antwerp. Soc. Roy. d'Horticult. et
- d'Agricult. 34. 945. Bruges. Soc. d'Horticulture et Botanique. 34.
- 974. Brussels. Soc. R. d'Horticulture. 35.
- 1000. Liege. Soc. R. d'Horticulture. 35.
- 1066. Bordeaux. Soc. d'Horticult. 38.
- 1132. Moulins. Soc. d'Horticulture. 40.
- 1139. Nimes. Soc. d'Horticult. et de Botanique du Gard. 40.
- 1179. Paris. Revue Horticole. 41.
- 1190. Soc. Cent. d'Horticult. 41.
- Soc. d'Horticulture. 42.
- 1502. Edinburgh. Horticultural Society. 51.
- 1658. London. R. Horticultural Soc. 55.
- 94. Horticultural Gardens. See Botanical Gardens.
- 95. Horticultural Schools. See Horticulture.
- 96. Hospitals. See Medicine and Surgery.
- 1379. Rome. Ospedali. 47.

- 1112. Lyon. Commiss. Hydrométrique. 39.
- 98. Hydrography.
  - 34. Christiania. Div. Topographique et Hydrog. 2.
  - 65. Copenhagen. Hydrographic Office. 4.
- 161. St. Petersburg. Hydrog. Depart. of the Min. of Marine. 8.
- 733. Pola. Hydrograph. Depot. 28.
- 816. Wien. Hydrograph. Anstalt Oesterr. Marine. 30.
- 99. Individuals.
- 1591. London. Duke of Northumberland. 53.
- 1598. Prof. W. H. Flower. 53.
- 1668. Gen. Sir Edward-Sabine. 55.
  - 1856. Auckland. U. S. Consul. 61.
  - 100. Industry, Popular. Economy, Science.
  - 238. Amsterdam. Assoc. for Pop. Industry. 12.
  - 477. Erfurt. Gewerbe-Ver. 20.
  - 1193. Paris. Soc. d'Encourage. l'Industrie Nationale. 41.
  - 1260. Bergamo. Soc. Industriale. 44.
  - 1388. Turin. Museo Industriale Italiano. 47.
- 1452. Belfast. Flax Extension Assoc. 49.
- 101. Industry and Trade.
- 256 Harlem. Soc. for Promotion of Industry. 13.
- 318. Bamberg. Gewerbe-Verein. 15.
- 339. Berlin. Gewerbe-Akad. 16.
- 374. Ver. des Gewerbefleisses. 17. 397. Bremen. Handels-Kammer. 18.
- 408. Breslau. Central-Gewerbe-Ver. 18.
- 418. Chemnitz. K. Gewerbschule. 18.
- 420. Handels-Lehranstalt. 18.
- 421. D. Indust. Zeitung. 18.
- 432. Darmstadt. Central-Stelle Gewerbe und Handel. 19.
- 434. Gewerbe-Verein. 19.
- 446. Dresden. Gewerbe-Verein. 19.
- 457. Handels-Lehranstalt. 19.
- 494. Fürth. Gewerbe-Ver. 20.
- 502. Görlitz. Gewerbe-Verein. 21.
- 516. Gras. Akad. für Handel und Industrie. 21.

522. Graz. Industrie-Gewerbe- Ver. 21. 542. Hamburg. Handels-Kammer. •22. tory. 550. Ver.für Handelsfreibeit. 22. 556. Hannover. Gewerbe-Verein. 22. 118. Moscow. Juridical Soc. 6. 583. Karlsruhe. Gewerbe-Verein. 179. St. Petersburg. Imp. Law School. 9. 603. Klagenfurt. Handels- und Gewerbekammer. 24. 605. Kärnt. Indust. Gewerbe-12. Ver. 24. 635. Leipzig. Handels-kammer. 25. Handels-Lehranstalt. 25. 656. Linz. Handels-Gewerbekammer. 25. 666. Mainz. Handels-Kammer. 26. dustry. 681. Mühlhausen. Soc. Industrielle. 26. 708. Nürnberg. Gewerbe-Verein. 27. 713. Offenbach. Handels-Kammer. 27. 724. Posth. Handels-Akad. 27. 738. Prag. Böhmischer Gewerbe-Ver. 28. Ver. Gewerbsgeist. 28. 765. Schärzburg. Gymnasium. 29. 108. Libraries. 785. Stuttgart. Gewerbe-Verein. 29. 787. K. Centralstelle für Gewerbe und Handel. 29. 797. Trier. Ges. nütsliche Forschungen. 30. 815. Wien. Handels- und Gewerbekammer. 75. Arkangel Naval Library. 4. 30. 838. Gewerbe-Ver. 31. 849. Wiesbaden. Gewerbe-Ver. 31. 139. Odessa, Public City Library. 7. 854. Worms. Handels-Kammer. 875. Basel. Gewerbe-Schule. 32. 964. Brussels. Soc. Centrale des Instituteurs. 34. 151. Riasan, Public Library. 7. 1028. Verviers. Soc. Industrielle et Commerciale. 36. 216. Tiffis. Public Library. 10. 1115. Lyon. Soc. des Sci. Industrielles. 39. 1414. Lisbon. Inst. Industrial. 48. 236. Amsterdam. City Library. 12. 1574. London. Board of Trade. 53. 1799. Batavia. Industrial Society. 59. 1910. Rio Janeiro. Soc. Aux. de Indust. Nac. 63.

## 102. Industry and Useful Knowledge.

- 659. Lübeck. Ges. zur Bef. gemeinnütziger Thätigkeit. 25.
- 965. Brussels. Soc. Arts Industriels. 34. 994. Liege. Comité du Cercle Indust. 35.
- 1689. Macclesfield. Soc. of Useful Knowledge. 56.

## 103. Journals of Universities. See Universities.

- 104. Jurisprudence. See also His-
  - 37. Christiania. N. Lawyer's Soc. 2.
- 227. Yarosslaw. Juridical Lyceum. 11.
- 252. Groningen. Soc. Nat. Jurisprudence.
- 624. Laibach. Juristische Ges. 24.
- 1505. Edinburgh. Faculty of Advocates. 51.
- 105. Knowledge, Useful. See In-
- 106. Language. See Philology.
- 107. Law. See Jurisprudence.
  - 13. Stockholm, Royal Library. 1.
  - 24. Vesteras. Lib. of Normal School. 2.
  - 37. Reykjavik. Lib. Icelandic Diocese. 3.
  - 52. Copenhagen. Royal Library. 3.
- 104. Cronstadt, Naval Library. 5.
- 109. Moscow. Chertkoff's Public Lib. 5.
- 143. Blankenburg. Naturwissens. Verein.
- 145. Odessa. Public Library. 7.
- 148. Orenburg. Public Library. 7.

- 173. St. Petersburg. Imp. Pub. Lib. &
- 217. Toola. Public Library. 10.
- 241. Arnhem. Public Library. 12.
- 243. Deventer. Public Library. 12.
- 247. The Hague. Royal Library. 12.
- 257. Harlem. Stadsbibliotheek. 13.
- 274. Middelburg. Prov. Bibliotheek. 13.
- 295. Aachen. Stadt-Bibliothek. 14.
- 319. Bamberg. König. Bibliothek. 15. 338. Berlin. König. Bibliothek. 16.
- 390. Braunschweig. Stadt-Bibliothek. 17.
- 402. Bremen. Stadt-Bibliothek. 18.
- 435. Darmstadt. Hof-Bibliothek. 19.
- 451. Dresden. Königl. Bibliothek. 19.
- 539. Universitäts-Bibliothek. (M.
- 541. Hamburg. Commerz-Bibliothek. 22.
- 546. Stadt-Bibliothek. 22. 558. Hannover. König. Bibliothek. 22.

<b>5</b> 87.	Karlsruhe. Hofbibliothek. 23.	1278. Florence. Biblioteca. 44.
589.	Kassel. Landes-Bibliothek. 23.	1310. Milan. Biblioteca Ambrosiana. 45.
618.	Kornik. Biblioteka Kórnicka. 24.	1311. Biblioteca Nazionale. 45.
645.	Leipzig. Stadt-Bibliothek. 25.	1341. Naples. Biblioteca Nazionale. 46.
653.	Lemberg. Biblioteka Zakladu Osso-	1358. Palermo. Biblioteca Nazionale. 46.
	linskich. 25.	1363. Parma. Biblioteca Naziouale. 47.
661.	Lübeck. Stadt-Bibliothek. 26.	1365. Pavia. Biblioteca Civica. 47.
688.	München. Hof- und Staats-Bibliothek.	1373. Roma. Biblioteca Vaticana. 47.
	26.	1401. Venice. Biblioteca Marciana. 47.
	Oldenburg. Bibliothek. 27.	1402. Biblioteca Publica. 48.
	Olmütz. K. K. Studien-Bibliothek. 27.	1409. Lisbon. Biblioteca Nacional. 48.
	Schwerin. Bibliothek. 29.	1430. Madrid. Biblioteca Nacional. 48.
	Stuttgart. K. Bibliothek. 29.	1444. Armagh. Public Library. 49.
	Wien. Hofbibliothek. 30.	1456. Birmingham. Free Reference Lib. 49.
	Geneve. Bibliothèque. 32.	1458. Blackburn. Free Library and Mu-
	Lausanne. Bibliothèque Canton. 33.	seum. 49.
	Antwerp. Bibliothèque Publique. 33.	1463. Bristol. City Library. 49.
	Arlon. Bibliothèque. 34.	1466. Cambridge. Free Library. 50.
	Ath. Bibliothèque. 34.	1479. Cork. Library of Queen's College. 50.
	Audenarde. Bibliothèque. 34.	1544. Leeds. Public Library. 52.
	Bruges. Bibliothèque. 34.	1545. Leicester. Free Library. 52.
948.	Brussels. Bibliothèque des Représen-	1617. London. Library of Com. of Trade. 54.
	tants. 34.	1618. Library of London. 54.
949.	Bibliothèque Roy. 34.	1619. Library Foreign Office. 54.
	Charleroi. Bibliothèque Publique. 35.	1620. Library of E. India Co. 54.
	Courtray. Bibliothèque Publique. 35.	1621. Library of the House of
	Furnes. Bibliothèque Publique. 35.	
	Hasselt. Bibliothèque Publique. 35.	
	Lokeren. Bibliothèque. 36.	Lords. 54.
	Louvain. Bibliothèque. 36.	1626. London Library. 54.
	Malines. Bibliothèque. 36.	1691. Manchester. Chetham's Library. 56. 1700. Maynooth College Library. 56.
	Mons. Bibliothèque. 36.	1706. Newcastle-upon-Tyne. Reading R.
	Namur. Bibliothèque. 36.	56.
	Ostende. Bibliothèque. 36. St. Nicolas. Bibliothèque. 36.	1717. Oxford. Bodleian Library. 56.
	Termonde. Bibliothèque. 36.	1721. Free Library. 57.
	Tirlemont. Bibliothèque. 36.	1723. Radeliffe Library. 57.
-	Tournai. Bibliothèque. 36.	1759. Athens. National Library. 58.
	Verviers. Bibliothèque. 36.	1763. R. Library. 58.
	Ypres. Bibliothèque. 36.	1766. Belgrad. State Library. 58.
	Bordeaux. Bibliothèque. 37.	1777. Algiers. Bibliothèque de la Ville. 59.
	Brest. Bibliothèque de la Marine. 38.	1784. Cape Town. South Africa Pub. Li-
	Marseilles. Bibliothèque. 39.	brary. 59.
	Paris. Bibliothèque de la Ville. 40.	1786. Grand Cairo. Bibliothèque Cent. 59.
1151.	Bibliothèque Imp. 40.	1788. Liberia. Government Library. 59.
1152.	Bibliothèque Municipale. 40.	1793. St. Helena. Library. 59.
1153.	Bibliothèque Polon. Hist. Lit-	1825. Neilgherries. Public Library. 60.
1100.	téraire. 40.	1837. Hobarton. Public Library. 61.
1224	Rennes. Bibliothèque. 42.	1838. Launceston, Public Library. 61.
	Rouen. Bibliothèque. 43.	1847. Melbourne. Public Library. 61.
	Plorence. Biblioteca Marncelliana. 44.	1863. Wellington. Parliament. Library. 61.
1276.	Biblioteca Nazionale. 44.	1890. Lima. National Library. 62.
1277.		1901. Paramaribo. Surin. Bibliotheek. 63.

- 1905. Rio Janeiro. British Library. 63. 1913. Santiago. Biblioteca Nacional. 63. 109. Libraries, Galleries of Art, Museums. 130. Moscow. Roomianzoff's Library and Museum. 6. 1552. Liverpool. Public Library, Museum, Gallery of Art. 52. 1581. London. British Museum. 53. 1696. Manchester. Free Library and Museum. 56. 1711. Nottingham. Library, Museum. 56. 1735. Salford. R. Museum and Library. 57. 1819. Kurrachee. Library and Museum. 60. 110. Literature. See also Art. 51. Copenhagen. Icelandic Liter. Soc. 3. 64. Soc. for the Advance-85. Helsingfors. Soc. for Finnish Literature. 4. 127. Moscow. Soc. of Amateurs of Russ. Literat. 6. 150. Reval. Estland Literary Soc. 7. 152. Riga. Lettische Litt. Ges. 7. 264. Leiden. Soc. Literat. Netherlands. 13. 331. Berlin. D. Shakespeare-Ges. 15. 364. Magazin Literat. Ausland. 16. 627. Laibach. Slovenischer Liter-Ver. 24. 801. Trieste. Società Sci. Letteraria, 30. 984. Ghent. Maatschappij van Nederl. Letterkunde. 35. 998. Liege. Soc. de Littérat. Wallonne. 35. 1006. Louvain. Soc. Littéraire de l'Université. 36. 1570. London. Arundel Soc. 53. Athenseum Club. 53. 1571. 1582. Camden Soc. 53. 1583. Caxton Soc. 53. 1605. Hakluyt Soc. 53.
- 111. Literature, Oriental. See Oriental Societies.

1765. Belgrad. Soc. of Serbian Literat. 58.

1770. Constantinople. Soc. for Turkish

1820. Madras. Literary Soc. 60.

Literature. 58.

R. Soc. of Literature. 55.

1665.

- 112. Lunatio Asylums.
- 1715. Nottingham. United Lunatic Asylum.
  56.
- 1728. Perth. Murray R. Institution. 57.
- 113. Longitude.
- 1154. Paris. Bureau des Longitudes. 40.
- 114. Lyceums. See Schools.
- 115. Magnetism and Meteorology. See Observatories.
- 116. Mathematical Science.
- 121. Moscow. Mathematical Soc. 6.
- 239. Amsterdam. Math. Soc. 12.
- 1627. London. Mathemat. Soc. 54.
- 117. Marine. See Naval Affairs.
- ment of Dan. Lit. 3.

  oc. for Finnish Litera4.

  of Amateurs of Russ

  118. Mechanical Science. See also
  Engineering, Architecture,
  etc.
  - 1592. London. Engl. Mechanic and Mirror of Sc. 53.
  - 1628. Mechanics' Inst. 54. 1713. Nottingham. Mechanics' Inst. 56.
  - 1803. Bombay. Mechanics' Institution. 59.
  - 1833. Emerald Hill. Mechanics' Inst. 60.
  - 1835. Hobarton. Mechanics' Institute. 60.
  - 1839. Launceston. Mechanics' Instit. and School of Arts. 61.
  - 119. Medical Science. See also Anatomy.
    - Anatomy.

      20. Stockholm. Soc. of Physicians. 2.
    - 31. Christiania. Medical Soc. 2.
    - 57. Copenhagen. Medical Soc. 3.
    - 76. Astrakhan. Soc. Naval Physicians. 4.
    - 89. Helsingfors. Soc. of Physicians of Finland. 5.
    - 106. Cronstadt. Soc. Naval Physicians. 5.137. Nicolaevak. Soc. Naval Physicians. 7.
    - 156. Riga. Soc. of Prac. Physicians. 8.
    - 196. St. Petersburg. Soc. of Naval Physicians. 10.
  - 525. Graz. Verein der Aerzte. 21.
  - 638. Leipzig. Medicinische Ges. 25.
  - 644. Deutsch. Archiv für Klin. Medicin. 25.

743.	Mets. Soc. des Sci. Médicales. 26.	121. Medicine and Pharmacy.
	Prag. Medicinische Facultüt. 28.	1778. Algiers. École de Méd. et Pharm. 59.
795.	Stuttgart. Aerztlicher Ver. 30.	
808.	Weilburg. Ver. Nassau. Aerzte. 30.	
843.	Wien. Zeitschrift für praktische Heil-	122. Medicine and Physics.
	kunde. 31.	112. Moscow. Physico-Medical Soc. 6.
931.	Antwerp. Soc. de Médecine. 34.	260. Hoorn. Soc. Medico Phys. Hornana. 13.
986.	Ghent. Soc. de Médecine. 35.	479. Erlangen. Physik-Medic. Ges. 20.
<b>9</b> 99.	Liege. Soc. de Médecine. 35.	1813. Calcutta. Med. Physical Soc. 60.
1081.	Caen. Soc. de Médecine. 38.	
1125.	Montpellier. Acad. Faculté de Méde-	100 75 11 1 1 5
	cine. 40.	123. Medicine and Surgery.
1143.	Paris. Acad. Imp. de Médecine. 40.	185. St. Petersburg. MedChir. Acad. 9
1147.	Archives général. de Médec. 40.	220. Vilna. Imp. Medical Soc. 11.
1162.	Gazette Médicale. 41.	225. Warsaw. MedChirurg. Acad. 11.
1207.	Soc. Méd. Allemande. 42.	230. Amsterdam. Medico-Chir. Soc. 11.
1381.	Rome. R. Ist. Fisio-Patologico. 47.	353. Berlin, Medicin. Ges. 16.
	Turin. R. Accad. di Medicina. 47.	899. Geneve. Soc. Médicale. 33.
1423.	Lisbon. Soc. des Sci. Medicas. 48.	946. Bruges. Soc. Médico Chirurgicale. 34.
	Oporto. Escola Medico-cirurgica. 48.	969. Brussels. Soc. Medico-Chirurg. pra-
	Edinburgh. R. Coll. of Physicians. 51.	tique. 35.
	Glasgow. Medical Journal. 51.	1246. Toulouse. Soc. de Médecine, Chirur-
	London. Rpidemiological Society. 53.	gie et Pharmacie. 43.
1607.	Harveian Med. Soc. 53.	1268. Bologna. Soc. Medico-Chirurgica. 44.
1608.	Hunterian Soc. 53.	1297. Genoa. Accad. Medico-Chirurgica. 45.
1630.	Medical Soc. 54.	1319. Milano. Ospedale Maggiore. 45.
1641.	Pathological Society. 54.	1347. Naples. R. Accad. MedChirurg. 46.
1655.	R. College of Physicians. 55.	1385. Turin. Accad. R. MedChirurg. 47.
1656.	R. College of Surgeons. 55.	1411. Lisbon. Escola Medico-Chirurgica. 48.
	Constantinople. Acad. Imp. de Méde-	1508. Edinburgh. MedChirurgical Soc. 51.
	cine. 58.	
1772	cine. 58. Gaz. Méd. d'Orient.	1637. London. Obstetrical Soc. London. 54.
1772.		1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55.
	Gaz. Méd. d'Orient.	1637. London. Obstetrical Soc. London. 54.
1797.	Gaz. Méd. d'Orient. 58.	1637. London. Obstetrical Soc. London.       54.         1662. R. Med. Chirurgical Soc.       55.         1671. St. Bartholomew's Hosp.       55.
1797. 1812.	Gaz. Méd. d'Orient. 58. Batavia. Medical Association. 59.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55.
1797. 1812.	Gaz. Méd. d'Orient. 58. Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60.	1637. London. Obstetrical Soc. London.       54.         1662. R. Med. Chirurgical Soc.       55.         1671. St. Bartholomew's Hosp.       55.
1797. 1812. 1898.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59.  Calcutta. Medical Gazette. 60.  Mexico. Soc. Medica. 63.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology.
1797. 1812. 1898.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural His-	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16.
1797. 1812. 1898.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59.  Calcutta. Medical Gazette. 60.  Mexico. Soc. Medica. 63.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16.
1797. 1812. 1898. <b>120</b> .	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural His-	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31.
1797. 1812. 1898. <b>120</b> .	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürlch. Meteor. anstalt. Naturfor-
1797. 1812. 1898. <b>120</b> .	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History. Utrecht. Archiv Natur- und Heil-	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33.
1797. 1812. 1898. <b>120</b> .	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürich. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Mont-
1797. 1812. 1898. <b>120</b> . 280. 294.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41.
1797. 1812. 1898. <b>120</b> . 280. 294. 382.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History. Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42.
1797. 1812. 1898. <b>120</b> . 280. 294. 382. 445.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14.  Bonn. Ges. Nat. n. Heilkunde. 17.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scot-
1797. 1812. 1898. <b>120.</b> 280. 294. 382. 445. 497.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14. Bonn. Ges. Nat. n. Heilkunde. 17. Dresden. Ges. Nat. u. Heilkunde. 19. Giessen. Ges. Nat. u. Heilkunde. 21.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scotland. 51.
1797. 1812. 1898. <b>120.</b> 280. 294. 382. 445. 497.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14. Bonn. Ges. Nat. n. Heilkunde. 17. Dresden. Ges. Nat. u. Heilkunde. 19.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scotland. 51. 1580. London. Brit. Meteorological Soc. 53.
1797. 1812. 1898. <b>120</b> . 280. 294. 382. 445. 497. 562.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14. Bonn. Ges. Nat. n. Heilkunde. 17. Dresden. Ges. Nat. u. Heilkunde. 19. Giessen. Ges. Nat. u. Heilkunde. 21. Heidelberg. Naturhist-medicinischer	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scotland. 51. 1580. London. Brit. Meteorological Soc. 53. 1631. Meteorol. Office. 54.
1797. 1812. 1898. <b>120</b> . 280. 294. 382. 445. 497. 562. 571.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14. Bonn. Ges. Nat. n. Heilkunde. 17. Dresden. Ges. Nat. u. Heilkunde. 19. Giessen. Ges. Nat. u. Heilkunde. 21. Heidelberg. Naturhist-medicinischer Ver. 23.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scotland. 51. 1580. London. Brit. Meteorological Soc. 53. 1631. Meteorol. Office. 54. 1791. Port Louis. Meteorol. Soc. 59.
1797. 1812. 1898. <b>120</b> . <b>280</b> . <b>291</b> . 382. 445. 497. 562. 571. 575.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14. Bonn. Ges. Nat. n. Heilkunde. 17. Dresden. Ges. Nat. u. Heilkunde. 19. Giessen. Ges. Nat. u. Heilkunde. 21. Heidelberg. Naturhist-medicinischer Ver. 23. Innsbruck. Naturwiss-med. Ver. 23.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scotland. 51. 1580. London. Brit. Meteorological Soc. 53. 1631. Meteorol. Office. 54. 1791. Port Louis. Meteorol. Soc. 59. 1814. Calcutta. Meteorol. Office. 60.
1797. 1812. 1898.  120.  280.  294.  382. 445. 497. 562.  571. 575. 732.	Gaz. Méd. d'Orient. 58.  Batavia. Medical Association. 59. Calcutta. Medical Gazette. 60. Mexico. Soc. Medica. 63.  Medicine and Natural History.  Utrecht. Archiv Natur- und Heilkunde. 14. Germany. Vers. D. Naturf. und Aertze. 14.  Bonn. Ges. Nat. u. Heilkunde. 17. Dresden. Ges. Nat. u. Heilkunde. 19. Giessen. Ges. Nat. u. Heilkunde. 21. Heidelberg. Naturhist-medicinischer Ver. 23. Innsbruck. Naturwiss-med. Ver. 23. Jena. Med naturwiss. Ges. 23. Plauen. Ver. Nat- u. Heilkunde. 28.	1637. London. Obstetrical Soc. London. 54. 1662. R. Med. Chirurgical Soc. 55. 1671. St. Bartholomew's Hosp. 55.  124. Meteorology. 282. Utrecht. R. Meteor. Inst. 14. 354. Berlin. Meteorol. Inst. 16. 839. Wien. Ges. für Meteorologie. 31. 920. Zürloh. Meteor. anstalt. Naturforschende Ges. 33. 1176. Paris. Observatoire Météorol. de Montsouris. 41. 1208. Soc. Météorol. 42. 1509. Edinburgh. Meteorol. Soc. of Scotland. 51. 1580. London. Brit. Meteorological Soc. 53. 1631. Meteorol. Office. 54. 1791. Port Louis. Meteorol. Soc. 59. 1814. Calcutta. Meteorol. Office. 60. 1823. Manilla. Observat. Meteorologico del

- ism. See Observatories.
- 126. Microscope, The.
- 1648. London. Quekett Microscop. Club. 55.
- 1663. R. Microscopical Soc. 55.
- 127. Military Science, including Academies, Bureaus, and Schools, etc.
  - 32. Christiania. Military Soc. 2.
- 169. St. Petersburg. Artillery Academy. 8.
- Engineering Academy. 8.
- I. Ni. Milit. Acad. 8. 171.
- 242. Breda. K. Milit. Akad. 12. 346. Berlin. K. P. Generalstab der Armee.
- 16. 347. K. P. Kriegs-Akademie. 16.
- 350. K. Artillerie und Ingenieur Schule. 16.
- 859. Jahrbücher für D. Armee und Marine. 16.
- 687. München. K. General-Quartiermeister-Stab. 26.
- 1170. Paris. Minist. de la Guerre. 41.
- 1282. Florence. Minist. della Guerra. 44. 1522. Farnboro' Station. R. Military College. 51.
- 1753. Woolwich. Royal Artillery Institution. 58.
- R. Military Academy. 58.
- 1912. Santiago. Acad. Militar. 63.
- See Geology, 128. Mineralogy. Museums, Zoology.
- 129. Mines. Engineering, See Mining.
  - 130. Ministry of Agriculture.
  - 344. Berlin. K. Minist. Landwirths. Angel. 11,
  - 131. Ministries of Agriculture, Commerce, Trade, etc.
  - 343. Berlin. K. Minist. für Handel, Gewerbe, öffent. Arbeiten. 16.
  - 1168. Paris. Minist. du Commerce et Agric.

- 125. Meteorology and Magnet- | 1281. Florence. Minist. di Agric., Indus. e Commercio. 44.
  - 132. Ministry of Domains.
  - 207. St. Petersburg. Sc. Comm. Min. Domains. 10.
  - 133. Ministry of Marine. See Naval Affairs.
  - 184. Ministry of Interior.
  - 340. Berlin. K. Minist. des Innern. 16.
  - 829. Wien. Minist. des Innern. 31.
  - 1283. Florence. Minist. dell' Intorno. 44
  - 135. Ministry of Public Instruction. See Public Instruction.
  - 828. Wien. Minist. für Cultur und Unterricht. 31.
  - 136. Ministry of Public Works.
  - 1174. Paris. Minist. des Travaux publics. 41. 1285. Florence. Minist. dei Lavori Pubblica. 44.
  - 137. Ministry of State.
  - 689. München. K. Staats-Ministerium. 26.
  - 138. Ministry of Trade.
  - 586. Karlsruhe. Bureau des Handels Kinister. 23.
  - 822. Wien. Handels Ministerium. 30.
  - 139. Ministry of War. See Military Affairs.
  - 140. Miscellaneous, not Classifled.
  - 300. Agram. Gospodarski List. 14.
  - 456. Dresden. Minist. des Königl. Hauses.
  - 620. Krakau. C. K. Towarzystwo Naukowe. 24.
  - 932. Antwerp. Soc. "de Olyftak." 34. 1587. London. Chronological Institute. 53.
  - 1614. Inventors' Institute. 54

#### 141. Moral and Political Science.

- 910. Porrentruy. Soc. Jurassienne d'Émulation. 33.
- 1330. Milano. Soc. Lombard. di Economia Politica. 46.
- 1433. Madrid. R. Acad. de Ciencias Morales y Politicas. 48.

#### 142. Museums in General.

- 25. Arendal. Arendal Museum. 2.
- 26. Bergen. Bergen Museum. 2.
- 122. Moscow. Public Museum. 6.
- 123. Pr. Galizin's Museum.
- 153. Riga. Museum. 7.
- 189. St. Petersburg. Marine Museum. 9.
- Museums of Acad. of Sciences. 9.
- 192. Museums of the Imp. Hermitage. 9.
- 213. Tiflis. Caucasian Museum. 10.
- 391. Bregens. Museums Verein. 17.
- 392. Bremen. Museum. 17.
- 436. Darmstadt. Museum. 19.
- 658. Ling. Museum Francisco-Carol. 25.
- 660. Lübeck. Mus. für Kunst und Natur. 25.
- 729. Pesth. Maygar Nemzeti Mus. 27.
- 740. Prag. K. Museum. 28.
- 764. Salzburg. Mus. Carol.-August. 29.
- 798. Trieste. Civico Museo Ferd. Mass. 30.
- 830. Wien. K. K. Naturalien-Kabinet. 31.
- 1343. Naples. Museo Nazionale. 46.
- 1416. Lisbon. Museo. 48.
- 1520. Exeter. Albert Memorial Museum. 51.
- 1551. Liverpool. Derby Museum. 52.
- 1709. Norwich. Museum. 56.
- 1730. Plymouth. Plymouth Museum. 57.
- 1783. Cape Town. South African Mus. 59.
- 1806. Bombay. Central Museum. 60. 1815. Calcutta. Museum. 60.
- 1821. Madras. Museum. 60.
- 1845. Melbourne. National Museum. 61.
- 1853. Sydney. Public Museum. 61.
- 1857. Christohurch. Canterbury Mus. 61.
- 1871. Buenos Aires. Museo Publico. 62.
- 1894. Mexico. Museo Nacional. 62.
- 1909. Rio Janeiro. R. Museum. 63.
- 1916. Santiago. Museo Nacional. 63.
- 143. Museums of Agriculture, etc.
- 202. St. Petersburg. Rural-Roon. Mus. 10. 330. Berlin. D. Gewerbemuseum. 15.

- 342. Berlin. K. Landwirthsch. Museum. 16.
- 626. Laibach. Landes-Museum. 24.
- 144. Museums of Anatomy.
- 1263. Bologna. Gabinetto Anatom. 44.
- 145. Museums of Antiquities.
- 1317. Milano. Museo d'Archeologia. 45.
- 1737. Salisbury. Blackmore Museum. 57.
- 146. Museums of Art (Fine Arts, etc.).
- 334. Berlin. Königliche Museen. 16.
- 1821. Milano. Gabinetto Numismatico. 45.
- 147. Museums of Botany.
- 270. Leiden. National Herbarium. 13.
- 148. Museums of Art and Indus-
- 832. Wien. Mus. Kunst Industrie. 31.
- 952. Brussels. Commiss. Administrative du Musée R. de l'Industrie. 34.

## 149. Museums of Ethnology and Archmology.

- 111. Moscow. Ethnographical Museum. 5.
- 193. St. Petersburg. Museum of Greek and Roman Antiquities. 9.
- 221. Vilna. The Museum of Antiquities. 11.
- 268. Leiden. Nat. Mus. of Antiquities. 13.
- 150. Museums of Geology.
- 1264. Bologna. Museo di Geol. 44.
- 1632. London. Mus. of Practic. Geology. 54.
- 151. Museums of History.
- 707. Nürnberg. Germanisches Museum. 27.
- 912. Rapperswyl. Musée Nat. Histor. Pologne. 33.
- 1426. Oporto. Pegneno Museu de Hist. Nat. da Camara Municipal. 48.
- 152. Museums of Mineralogy and Mining.
  - 72. Copenhagen. Min. Mus. of the Univ. 4.
- 194. St. Petersburg. Mus. of Min. Corpe. 9.
- 458. Dresden. Königl. Mineral. Mus. 19.
- 824. Wien. Hof-Mineralien-Kabinet. 30.

447.

- 153. Museums of Natural History. 267. Leiden. Nation. Mus. of Nat. Hist. 13.
  - 299. Agram. Naturhist. National-Mus. 14.
  - 607. Klagenfurt. Naturhistor. Museum. 24. 608. Klausenburg. Erdélyi Muz.-Egylet. 24.
  - 806. Waren. Maltzau. Naturhist. Mus. 30.
- 1065. Bordeaux. Mus. d'Hist. Naturelle. 38.
- 1094. Douai. Musée d'Hist. Natur. 38.
- 1150. Paris. Muséum d'Hist. Nat. 40. 1222. Reims. Muséum d'Hist. Natur. 42.
- 1291. Florence. R. Museo di Fisica e Storia Nat. 45.
- 1298. Genoa. Museo di Storia Nat. 45. 1316. Milano. Mus. Civ. di Storia Nat. 45.
- 1318. Museo di Storia Nat. dei fratelli Villa. 45.
- 1394. Turin. R. Museo di Storia Nat. 47. 1719. Oxford. Museum of Nat. History. 56.
- 1761. Athens. Nat. Hist. Museum of the University. 58.
- 154. Museums of Zoology. 73. Copenhagen. Zool. Mus. Univer. 4.
- 499. Giessen. Zoologisches Museum. 21.
- 515. Göttingen. Zoologisches Museum. 21. 155. National History. See Phil-
- ology. 156. Natural History in General.
- (Societies.) 5. Scandinavia. Soc. of Naturalists. 1.
  - 61. Copenhagen. Natural History Soc. 3. 79. Dorpat. Soc. of Naturalists. 4. 95. Kasan. Soc. Naturalists University. 5.
  - 97. Kharkow. Soc. of Naturalists. 5. 101. Kiew. Univ. Soc. of Naturalists. 5.
  - 113. Moscow. Imp. Soc. of Naturalists. 6.
  - 140. Odessa. Soc. of Naturalists. 7.
  - 154. Riga. Soc. of Naturalists. 7.
  - 195. St. Petersburg. Soc. of Naturalists, University. 9.
  - tion. 11. 240. Arnhem. Nat. Hist. Soc. 12.
  - 278. Schiedam (Zuid-Holland). Nat. Hist.

228. Yarosslaw. Soc. Nat. Hist. Explora-

- Soc. "Martinet." 14. 303. Altenburg. Naturforschende Ges. 15.
- 307. Annaberg. Verein Naturkunde. 15.
- 313. Augsburg. Naturhist. Verein. 15. 320. Bamberg. Naturforschende Ges. 15.

- - 336. Berlin. Ges. Naturf. Freunde. 16. 379. Blakenburg. Naturw. Ver. 17.
  - 381. Bonn. Naturhistor. Verein. 17. Archiv für Naturgesch. 17.
  - 400. Bremen. Naturwissens. Ver. 18.
  - 411. Breslau. Ver. für Insektenkunde. 18. 415. Brünn. Naturforsch. Ver. 18.
  - 419. Chemnitz. Naturwiss. Gess. 18.
  - 425. Colmar. Soc. d'Hist. Nat. 18.
  - 429. Danzig. Naturf. Ges. 18.
  - 440. Deidesheim. Pollichia: Nat. Ver. 19.
  - 441. Dessau. Naturhistorischer Verein. 19. 441a. Donaueschingen. Ver. für Gesch. und
  - Naturgeschichte. 19. 444. Dresden. Ges. Botan. and Zoologie. 19.
  - Gesellschaft "Isis." 19. 463. Dürckheim. Pollichia, Nat. Ver. 19.
  - 467. Elberfeld. Naturw. Ver. 20. 472. Emden. Naturforschende Ges. 20.
  - 483. Franfurt-am-Main. Senck. Naturi. Ges. 20.
  - 488. Freiburg. Ges für Beförderung der Naturwiss. 20. 495. Gera. Ges. Freunde der Naturwiss. 21.
  - 521. Graz. Naturwissens. Ver. 21.
  - 528. Güstrow. Freunde der Naturg. 21. 533. Halle. Naturforschende Ges. 22.
  - Naturwissens. Verein. 22. 534.
  - 537. Natur. 22.
  - 544. Hamburg. Naturwissen. Verein. 22.
  - 553. Hanau. Ges. für Naturkunde. 22. 560. Hannover. Naturhist. Ges. 22.
  - 565. Hermannstadt. Ver. für Naturwissenschaften. 23. 588. Karlsruhe. Naturwiss. Ver. 23.
  - 593. Kassel. Ver. für Naturkunde. 24. 601. Kiel. Ver. Verbreitung Naturwissen.
  - Kenntnisse. 24. 609. Klausthal. Natur. Ver. "Maja." 24.
  - 610. Koblenz. Naturhistor. Ver. 24. 611. Koburg. Ver. für Naturkunde. 24.
  - 664. Lüneburg. Naturwissens. Ver. 26.
  - 667. Maing. Rhein. Naturforsch. Ges. 26. 670. Mannheim. Ver. für Naturkunde. 26.
  - 671. Marburg. Ges. Beförderung Naturwissen. 26.
  - 677. Meissen. Ges. "Isis." 26. 679. Mets. Soc. d'Hist. Nat. Moselle. 26.
  - 709. Nürnberg. Naturhistorische Ges. 27.
  - 712. Ofen. Soc. der Naturalisten. 27. 714. Offenbach. Ver. für Naturkunde. 27.
  - 720. Passau. Naturhistorischer Verein. 27. 725. Pesth. Hungar. Soc. of Nat. Sci. 27.

```
734. Posen. Naturwissenschaft. Ver. 28. 1710. Norwich. Naturalists' Society. 56.
 744. Prag. Naturhist. Ver. "Lotos." 28.
                                          1716. Oxford. Ashmolean Soc. 56.
                                          1729. Plymouth. Institut. Devon and Corn-
 750. Pressburg. Ver. für Naturkunde. 28.
 757. Reichenbach. Ver. Naturkunde. 28.
                                                          wall Nat. Hist. Soc. 57.
 781. Strassburg. Soc. des Sc. Natur. 29.
                                          1731. Richmond. Natural. Field Club. 57.
 792. Stuttgart. Ver. Vat. Naturkunde. 30.
                                          1749. Torquay. Nat. Hist. Soc. 57.
 804. Ulm. Naturwissenschaft. Ges. 30.
                                          1755. Woolhope. Natural. Field Club. 58.
 846. Wien. Ver. zur Verbreitung Natur-
                                          1756. Wycombe. Nat. Hist. Soc. 58.
                                          1790. Mauritius. Soc. d'Hist. Nat. 59.
                wissens. Kenutnisse. 31.
 851. Wiesbaden. Ver. Naturkunde. 31.
                                          1798. Batavia. K. Naturkundige Ver. in
 862. Zweibrücken. Naturhistor. Ver. 32.
                                                          Nederlandsch-Indie. 59.
 871. Aarau. Aargaui. Naturf. Ges. 32.
                                           1846. Melbourne. Nat. Hist. Soc. 61.
 876. Basel. Naturforsch. Ges. 32.
                                                               Westland Naturalists'
                                           1865. Wellington.
 882. Bern. Naturforschende Ges. 32.
                                                          and Acclimatization Soc. 61.
 887. Chur. Naturforch. Ges. 32.
                                           1868. Bogota. Soc. de Naturalistas. 62.
 906. Lausanne. Soc. Vaudoise Sc. Nat. 33.
                                           1900. Mexico. Soc. Mex. de Hist. Nat. 63.
 909. Neuchatel. Soc. Sc. Naturelles. 33.
                                           1918. Santiago. Soc. de Hist. Natural. 63.
 911. Rheinfelden. Naturhistor. Ges. 33.
 913. St. Gallen. Naturwissen. Ges. 33.
                                           157. Natural History in General,
 914. Sion. Soc. Valais. Sc. Naturelles. 33.
                                                  Journals.
 915. Solothurn. Naturforschende Ges. 33.
                                            62. Copenhagen. Journal Natural Hist. 3.
 912. Zurich. Naturforschende Ges. 33.
                                            67.
                                                              Journal Pop. Nat. Sc. 4.
 959. Brussels. Musée R. d'Hist. Nat. 34.
                                           693. München. Zeitschrift Biologie. 27.
 985. Ghent. Soc. d'Hist. Naturelle. 35.
                                          1166. Paris. Journal de Conchyliologie. 41.
1002. Liege. Soc. des Sci. Naturelles. 36.
                                          1180.
                                                        Revue et Mag. de Zoologie. 41.
1088. Cherbourg. Soc. des Sc. Natur. 38.
                                           1265. Bologna. Repert. Ital. di Bianconi.
1101. Gueret. Soc. des Sc. Nat. 39.
                                                          44.
1135. Nantes. Soc. d'Hist. Natur. 40.
                                           1566. London. Annals and Mag. Nat. Hist.
1146. Paris. Annal. Sc. Nat. 40.
                                                            52.
             Soc. de Biologie. 41.
1188.
                                          1606.
                                                          Hardwicke's Sc. Gossip. 53.
1230. Rouen. Soc. des Amis Sc. Nat. 43.
                                          1609.
                                                          The Ibis. 54.
1245. Toulouse. Soc. d'Hist. Nat. 43.
                                                          Land and Water. 54.
                                          1616.
1272. Catania. Accad. di Sc. Natur. 44.
                                          1634.
                                                          Nature. 54.
1336. Modena. Soc. dei Naturalisti. 46.
                                          1679.
                                                          Student and Intellectual Ob-
1339. Naples. Accad. Aspiranti Natur. 46.
                                                            server. 55.
1441. Alnwick. Berwick. Nat. Club. 49.
1442. Armagh. Nat. History Society. 49.
                                          158. Natural History. See Archæ-
1450. Belfast. Naturalists' Field Club. 49.
                                                 ology, Botany, Entomology,
1460. Brighton. Brighton and Sussex Nat.
                                                 Medicine, Museums, Or-
               Hist. Soc. 49.
1462. Bristol. Naturalists' Soc. 49.
                                                 nithology, Science in Gen-
1474. Dover. Nat. Hist. Soc. 50.
                                                 eral, Zoology.
1481. Cotteswold. Natural. Field Club. 50.
1487. Dublin. Univ. Zool. Botan. Assoc. 50.
                                          159. Natural History and Phar-
               Nat. Hist. Soc. of Dublin. 50.
1492.
                                                 macy.
1498. Dudley. Geolog. Scient. Soc. 50.
1558. Liverpool. Natural. Field Club. 52.
                                           576. Jena. Pharmac.-naturwissens. Ver. 23.
1649. London. Ray Society. 55.
1695. Manchester. Field Natural. Soc. 56.
                                          160. Natural Science. See Natu-
1704. Newcastle-upon-Tyne. Nat. Hist.
                                                 ral History.
               Soc. 56.
                                           251. Groningen.
                                                             Soc. for the Advance.
1707.
                              Naturalists'
```

Nat. Sc. 12.

Field Club. 56.

- 503. Görlitz. Naturforsch. Ges. 21. 1223. Reims. Soc. Sci. Naturelles. 42. 1329. Milan. Soc. Ital. di Sci. Natur. 46. 96. Kasan. Observatory. 5. 161. Natural and Physical Sci-102. Kiew. Observatory. 5. ence. 128. Moscow. Observatory. 751. Pressburg. Ver. für Natur- und Heilkunde. 28. 149. Pulkova. Nicholas Chief Observ. 7. 889. Geneve. Archives des Sc. Phys. et 219. Vilna. Astron. Observatory. 11. Nat. 32. 223. Warsaw. Astron. Observ. 11. 898. Soc. de Physique et d'Hist. Nat. 33. 1226. Rennes. Soc. des Sc. Phys. et Nat. 162. Nautical Almanaos. See Na-386. Bonn. Sternwarte. 17. val Science. 401. Bremen. Observatorium. 18. 410. Breslau. Sternwarte. 18. Affairs, Including 163. Naval 509. Gotha. Sternwarte. 21. Ministry of Marine. 512. Göttingen. K. Sternwarte. 21. 188. St. Petersburg. Ministry Marine. 9. Sc. Com. Marine. 9. 547. 227. Rotterdam. Neder. Yacht-Club. 13. 365. Berlin. Nautisches Jahrbuch. 16. 480. Flume. K. K. Marine-Akademie. 20. 800. Triest. Nautische Akad. 30. 827. Wien. Marine Ober-Commando. 31. 650. Leipzig. Sternwarte. 25. Marine-Section des Kriege-837. 669. Mannheim. Sternwarte. 26. Minist. 31. 672. Marburg. Sternwarte. 26. 1173. Paris. Minist. de la Marine et des
  - Colonies. 41.
- 1286. Florence. Minist. della Marina. 44. 1412. Lisbon. Escola Naval. 48.
- 1573. London. Board of Admiralty. 1635. Nautical Almanac. 54. R. Nation. Life-Boat Inst. 55. 1664.

## 164. Numismatics.

- 844. Wien. Numismat. Monatshefte. 31. 970. Brussels. Soc. de Numismatique
- Beige. 35. 1636. London. Numismatic Society. 54. 1698. Manchester. Numismatic Soc. 56.

## 165. Observatories.

- 10. Lund. Observatory. 1.
- 17. Stockholm. Observator. 2.
- 23. Upsala. University Observatory. 2.
- 27. Bergen. Observator. 2.
- 43. Christiania. Univers. Observator. 3. 1344. Naples. Osservatorio. 46.

- 69. Copenhagen. Astron. Observator. 4. 78. Catharineburgh. Naval Observ. 4.
- 80. Dorpat. imp. Astron. Observatory. 4.
- 105. Cronstadt. Naval Astron. Observ. 5.
- 136. Nicolaev. Observatory. 7.
- 269. Leiden. National Observatory. 13.
- 283. Utrecht. Observatorium. 14.
- 305. Altona. K. Sternwarte. 15.
- 352. Berlin. K. Un. Steruwarte. 16.
- 373. Bilk (bei Düsseldorf). Sternwarte. 17.

- 430. Danzig. Sternwarte. 18.

- 545. Hamburg. Norddeutsche Seewarte. 22.
- Sternwarte. 22.
- 617. Königsberg. Sternwarte. 24.
- 619. Kornik. Sternwarte. 24.
- 621. Krakau. Sternwarte. 24.
- 622. Kromsmünster. Sternwarte. 24.

- 691. München. K. Sternwarte. 26.
- 699. Münster. Sternwarte. 27.
- 711. Ofen. K. K. Sternwarte. 27.
- 727. Peath. K. K. Sternwarte. 27.
- 742. Prag. Sternwarte. 28.
- 775. Speier. Sternwarte. 29.
- 835. Wien. Sternwarte. 31. 885. Bern. Sternwarte. 32.
- 893. Geneve. Observatoire. 32.
- 908. Neuchatel. Observatoire. 33.
- 923. Zürich. Sternwarte. 33. 960. Brussels. Observatoire. 34.
- 1120. Marseille. Observatoire. 39.
- 1175. Paris. Observatoire. 41.
- 1244. Toulouse. Observatoire. 43.
- 1292. Florence. R. Osservatorio. 45.
- 1299. Geneva. Osservatorio. 45.
- 1325. Milan. R. Osservatorio Astron. 45.
- 1334. Modena. Osservatorio. 46.
- 1338. Moncalieri. Osservatorio del R. Coll. 46.

- 1355. Padua. Osservat. Astron. Università. 46.
- 1361. Palermo. R. Osservatorio. 46.
- 1378. Rome. Osservaterio Astron. 47.
- 1395. Turin. R. Osservatorio. 47.
- 1417. Lisbon. Observatorio Astron. 48.
- 1418. Observatorio do Infante D. Luiz. 48.
- 1420. R. Observatorio de Marinha. 48.
- 1431. Madrid. Observatorio. 48.
- 1436. San Fernando. Observatorio de Marina. 49.
- 1438. Aberdeen. Observatory. 49.
- 1443. Armagh. Observatory. 49.
- 1467. Cambridge. Observatory. 50.
- 1476. Churts. Carrington's Observatory. 50.
- 1493. Dublin. Observatory. 50.
- 1500. Durham. Observatory. 51.
- 1513. Edinburgh. R. Observatory. 51.
- 1529. Glasgow. Observatory. 51.
- 1532. Greenwich. R. Observatory. 51.
- 1538. Kew. Observatory. 52.
- 1548. Leyton. Observatory of J. G. Barclay. 52.
- 1560. Liverpool. Observatory. 52.
- 1572. London. Mr. Bishop's Observat. 53.
- 1724. Oxford. Radeliffe Observatory. 57.
- 1762. Athens. Observatory. 58.
- 1782. Cape Town. R. Observatory. 59.
- 1822. Madras. Observatory. 60.
- 1830. Adelaide. Astron. Observatory. 60.
- 1843. Melbourne. Observatory. 61.
- 1851. Sydney. Observatory. 61.
- 1877. Cordova. Observat. Nacional. 62.
- 1879. Georgetown. Observatory. 62.
- 1886. Habana. R. Obs. Fisico-Meteoro. 62.
- 1903. Quito. Observ. del Col. Nacional. 63.
- 1907. Rio Janeiro. Nautical Observ. 63. 1917. Santiago. Observat. Nacional. 63.
- 166. Observatories, Astronomical. See Observatories.
- 167. Observatories, Compass.
- 103. Cronstadt. Compass Observatory. 5.
- 168. Observatories, Magnetical and Meteorological.
  - 35. Christiania. N. Meteorological Inst. 2.
  - 77. Barnaul. Meteorol. Observatory. 4. 174. Patents. See Technology.

- 88. Helsingfors. Magnet. and Meteorol. Observatory. 4.
- 135. Nertshinsk. Meteorol. Observatory. 7.
- 211. St. Petersburg. Ceu. Phys. Obser. 10.
- 215. Tiflis. Magn. and Meteor. Observ. 10.
- 818. Wien. Central-Austalt Meteor. Erd-Magnet. 30.
- 1419. Lisbon. Observat. Meteorol. na Escula Polytech. 48.
- 1792. St. Helena. Mag. and Met. Obs. 59.
- 1807. Bombay. Mag. and Met. Obs. 60.
- 1834. Hobarton. Mag. and Met. Obs. 60.
- 1884. Habana. Obs. Mag. Meteor. 62.
- 169. Observatories, Physical. See Observatories, Magnetical and Meteorological.
- 170. Obstetrics. See Medicine and Surgery.
- 171. Oriental Literature and Science.
- 119. Moscow. Lasarew-Ins. of Oriental Languages. 6.
- 209. St. Petersburg. Oriental Institute. 10.
- 632. Leipzig. Morgenländ. Ges. 25.
- 1148. Paris. L'Athenée Oriental. 40. 1160.
- École des Langues orientales. 41. 1187.
  - Soc. Asiatique. 41.
- 1209. Soc. Orientale de France. 42.
- 1652. London. Royal Asiatic Society. 55.
- 1681. Syro-Egyptian Society. 55.
- 1775. Constantinople. Soc. Orientale. 58.
- 172. Ornithology.
- 291. Germany. D. Ornithologen-Ges. 14.
- 361. Berlin. Journal für Ornithol. 16.
- 900. Genève. Soc. Ornitholog. Suisse. 33.
- 1609. London. The Ibis.
- 173. Palmontology.
- 981. Charleroi. Soc. Paléontol. et Archéologique. 35.
- 1639. London. Palsontographical Soc. 54.
- 1640. Palæontological Soc. 54.
- 1872. Buenos Ayres. Soc. Palmontol. 62.

### 175. Pharmacy.

- 11. Stockholm. Pharmaceutical Inst. 1.
- 167. St. Petersburg. Imp. Phar. Soc. 8.
- 290. Germany. All. Apothek.-Verein. 14.
- 377. Bernburg. Apotheker Verein. 17.
- 535. Halle. Apotheker-Verein. 22.
- 563. Heidelberg. Südd. Apoth.-Ver. 23.
- 754. Regensburg. K. Apothek.-Ver. 28.
- 865. Switzerland. Apotheker-Ver. 32.
- 933. Antwerp. Soc. de Pharmacie. 34.971. Brussels. Soc. de Pharmacie. 35.
- 1210. Paris. Soc. de Pharmacie. 42.
- 1421. Lisbon. Soc. Pharma. Lusitana. 48.
- 1510. Edinburgh. Pharmaceutical Soc. 51.
- 1642. London. Pharmaceutical Soc. 54.
- 1673. Soc. of Apoth. of Lond. 55.

# 176. Philology. See also Antiquities, Ethnology, History.

- Copenhagen. Soc. of Natural Hist. Language. 3.
- 66. Philolog. Journal. 4.
- 160. St. Petersburg. Phil. Soc. Univ. 8.
- 337. Berlin. Ges. für Stud. der neuern Sprachen. 16.
- 773. Constantinople. Hellenic Phil. Soc. 58.
- 1643. London. Philological Society. 54.

# 177. Philosophy, Experimental. See Physical Science.

178. Phonography. See Stenography.

#### 179. Photography.

- 458. Dresden. Photographische Ges. 19.
- 841. Wien. Photographische Ges. 31.
- 1644. London. Photographic Society. 54.
- 180. Physicians. See Medicine.

#### 181. Physical Culture.

- 786. Stuttgart. Heilgymnastisches Instit. 29.
- 182. Physical Science. See also Natural Science.
- 355. Berlin. Physikal. Ges. 16.

- 275. Rotterdam. Soc. of Experimental Philosophy. 13.
- 857. Würzburg. Physikalisch-Medicinis. Ges. 31.
- 183. Physical Observatories. See Observatories.
- 184. Physics. See Economy, Medicine, Physical Science, Science.

## 185. Physiology.

- 383. Bonn. Archiv für Physiologie. 17.
- 406. Breslau. Physiolog. Inst. 18.
- 641. Leipzig. Archiv für Anat. Physiol. Med. 25.
- 859. Würzburg. Jahresb. der Phys. 32.
- 186. Political Science. See Moral Science.
- 187. Polytechnics. See Technology.
- 188. Pomology. See Agriculture, Horticulture.
- 752. Ravensburg. Monats. für Obst. und Weinbau. 28.
- 758. Reutlingen. Pomolog. Institut. 28.
- 189. Popular Industry. See Industry.

#### 190. Poultry.

- 505. Görlitz. Ver. für Gefügelzucht. 21. 506. Ver. für Hühnerzucht. 21.
- Printing. See also Booksellers.
- 825. Wien. Hof- und Staatsdruck. 31.
- 192. Prisons.
- 793. Stuttgart. Ver. Fürsorge entlassene Strafgefangene. 30.
- 193. Provincial Welfare. See Welfare.

- 194. Psychology.
- 321. Bendorf bei Koblens. Psychiatrie gericht. Psychol. 15.
- 195. Public Instruction, Ministry of.
  - 186. St. Petersburg. Min. Pub. Inst. 9.
  - 694. München. Minist. öffentlichen Unterrichts. 26.
- 1171. Paris. Minist. l'Instruct. Pub. et des Cultes. 41.
- 1284. Florence. Minist. dell' Istruzione Pubblica. 44.
- 1915. Santiago. Minist. de Instr. Pub. 63.
- 196. Quartermaster Corps. See Military Science.
- 197. Railroads.
- 371. Berlin. Ver. Eisenbahnkunde. 17.
- 651. Leipzig. Ver. Deuts. Eisen.-Ver. 25.
- 198. Records, Public.
  - 55. Copenhagen. Roy. Court of Rec. 3.
  - 791. Stuttgart. R. Staats Archiv. 29.
- 199. Religion.
  - 42. Christiania. Theological Society. 3.
  - 45. Stavanger. Norweg. Mission. Soc. 3.
- 246. The Hague. Soc. for Christ. Relig. 12.
- 357. Berlin. Haupt-Bibelges. 16.
- 1676. London. Soc. Promotion of Christ. Knowledge. 55.
- 1677. Soc. for the Propagation of the Gospel. 55.
- 200. Rural Economy. See Agriculture.
- 201. Schools, Academies (including Gymnasia and Lyceums). See also Universities.
  - 92. Jaroslavl. Demidoff's Lyceum. 5.
- 134. Negin. Count Bezborodko's Lyceum.
  7.
- 163. St. Petersburg. Imp. Alex. Lyc. 8.
- 464. Eisenbach. Grosshers Gymnas. 20.
- 465. Real-Gymnasium. 20.
- 519. Graz. K. K. Staats Gymnasium. 21.

- 523. Graz. Landes-Ober-Realschule. 21.
- 543. Hamburg. Johanneum. 22.
- 552. Hamm. K. Gymnasium. 22.
- 646. Leipzig. Städtische Realschule. 25.
- 701. Neisse. Kathol. Gymnasium. 27.
- 703. Realschule. 27.
- 710. Ofen. K. K. Ober-Realschule. 27.
- 716. Olmütz. K. K. Deuts. Gymnas. 27.
- 717. K. K. Ober-Realschule. 27.
- 726. Pesth. K. K. Obergymussium. 27.
- 731. Plauen. Gymn. und Realschule. 28.735. Posen. Städtische Realschule. 28.
- 762. St. Pölten. Oest. Ober-Realschule.
- 771. Sondershausen. Realschule. 29.
- 772. Schwarzburg Gymnasium. 29.
- 831. Wien. Ober-Gymnasium. 31.
  833. Schottenfelder Ober-Realsch.
  31.
- 853. Worms. Gymnasium. 31.
- 881. Bern. Kantons-Schule. 32.
- 1368. Pisa. R. Scuola Norm. Superiore. 47.
- 1410. Lisbon. Escola da Exercito. 48.
- 1699. Manchester. Owen's College. 56.
- 1718. Oxford. Magdalen College. 56.
- 202. Science in General (including Academies, Associations, and Societies of widest scope).
  - 7. Lund. Physiographic Association. 1.
  - 15. Stockholm. Swed. Acad. of Sci. 1.
  - 19. Swedish Academy. 2.
  - 22. Upsala. Royal Soc. of Sciences. 2.
  - 39. Christiania. Physiographic Soc. 2.
  - 44. Scientific Soc. 3.
  - 46. Drontheim. Norweg. Soc. of Sci. 3.
  - 48. Reykjavik. Sci. Assoc. of Iceland. 3.
  - 54. Copenhagen. Soc. of Science. 3.86. Helsingfors. Finnish Soi. Soc. 4.
  - 162. St. Petersburg. Imp. Acad. Sci. 8.
  - 254. Harlem. Bureau Sci. Central. 12.
- 255. Soc. of Sci. of Holland. 13.
- 258. Teyler's Stichting. 13.
- 259. 'sHertogenbosch. Provin. Soc. of Arts and Soi. 13.
- 261a. Luxembourg. Inst. Luxembourgeois. 13.
- 273. Middelburg. Zealand Son. of Sci. 13.
- 284. Utrecht. Soc. of Arts and Sci. 14.
- 345. Berlin. K. P. Akad. Wissens. 16.
- 449. Dresden. K. L. C. Akad. Natur. 19.

504.	Görlitz. Gesellsch. der Wissens. 21.
511.	Göttingen. Ges. der Wissens. 21.
569.	Innsbruck. Ferdinandeum. 23.
	Leipzig. Jablonowski'sche Ges. 25.
636.	
	Metz. Acad. Imp. de Metz. 26.
	München. K. Acad. Wissen. 26.
	Neisse. Philomatische Ges. 27.
	Nordhausen. Wissenschaft. Ver. 27.
722.	Peath. A Magyar Tudományos Akad. 27.
	Prag. K. Ges. der Wissen. 28.
761.	Roveredo. Accad. di Lettere e Sci.
	28.
780.	Strassburg. Soc. des Sci. Agricult.
	et Arts. 29.
	Wien. K. Akad. der Wissens. 30.
	Switzerland. Ges. Naturwissen. 32.
	Basel. Société des Sui. 32. Bern. Soc. des Sciences. 32.
	Geneve. Inst. Nat. Genevois. 32.
	Zürich. Soc. des. Sciences. 33.
	Antwerp. Cercle Artistique, Littér.
	et Scien. 33.
947.	Brussels. Acad. R. des Sci. Lettres et
	Beaux Arts. 34.
973.	Soc. R. de Flore. 35.
975. <b>9</b> 79.	Soc. R. Linneenne. 35.
	Soc. Vésalienne. 35.  Ghent. Soc. de Vlaemsche. 35.
990.	Soc. Het Willems fonds. 35.
	Liege. Soc. libre d'Emulation. 35.
1001.	Soc. R. des Solumose 36
1013	Soc. R. des Sciences. 36.  Mons. Soc. des Sci. des Arts et des
	Lettres. 36.
1024.	Tongres. Soc. Sci. et Littéraire. 36.  Tournai. Soc. Hist. et Littéraire. 36.
1026. 1020	Tournal. Soc. Hist. et Littéraire. 86.
	Ypres. Soc. Hist. Archéol. et Litté- raire. 36.
1031.	·
10 <b>32.</b>	
1033.	
1034.	Abbeyville. Soc. d'Emulation. 37.
1035.	Soc. Linnéene du Nord. 37.
1038	Agen. Soc. d'Agric. Sci. et Arts. 32.
1037	Aix. Acad. des Sci. Agric. Arts et
,	Belles-Lettres. 37.
1038.	Amiens. Acad. des Sci. Belles-Lettres,
•	Arts, Agr. Commerce. 37.
1040.	Soc. Linnéenne du Nord. 37.
	Angers. Soc. Academ. de Maine-et-
	Tain 07

Loire. 37.

1042. Angers. Soc. d'Agric. Sci. et Arts. 37. Soc. Linnéenne. 37. 1046. Annecy. Soc. Florimontane. 37. 1048. Arras. Académie d'Arras. 37. 1049. Aurillac. Sov. Académique. 37. 1050. Auxerre. Soc. des Sci. Hist. et Nat. 37. 1053. Bagnères des Bigorre. Soc. Ramond. 37. 1054. Bayeaux. Soc. d'Agric. Sci. Arts et Belle-Lettres. 37. 1055. Beauvais. Soc. Acad. d'Archéologie, Sci. et Arts. 37. 1057. Besangon. Acad. des Sci. Belles-Lettres et Arts. 37. 1058. Soc. d'Emulation du Doubs. 37. 1060. Blois. Soc. des Sci. et Lettres. 37. 1061. Bordeaux. Acad. des Sci. Belles-Lettres et Arts. 37. 1067. Soc. Human, et Sei. 38. 1068. Soc. Linnéennee. 38. 1069. Soc. Philomathique. 38. 1070. Soc. des Sci. Phys. Nat. 38. 1071. Boulogne. Soc. Académique. 38. 1072. Bourg. Soc. d'Emulation de l'Aim. 38. 1076. Brest. Soc. Acad. 38. 1077. Caen. Acad. des Sci. Arts et Belles-Lettres. 38. 1080. Soc. Linn. de Normandie. 38. 1082. Cambrai. Soc. d'Emulation. 38. 1083. Chambery. Acad. Imp. de Savoie. 38. 1084. Châlons-sur-Marne. Soc. d'Agric. Commerce et Sci. 38. 1087. Cherbourg. Soc. Acad. 38. 1089. Clermont-Ferrand. Acad. des Sci. Belles-Lettres et Arts. 38. 1090. Dijon. Acad. des Sci. Arts et Belles-Lettres. 38. 1095. Douai. Soc. Imp. d'Agric. Sci. Arts. 38. 1096. Draguignan. Soc. des Études Scien. et Litéraires. 39. 1097. Dunkerque. Soc. pour l'Encouragement des Sci. 39. 1098. Epinal. Soc. d'Emulation des Vosges. 39. 1099. Evreux. Soc. d'Agric. Sci. Arts et Belles-Lettres. 39. 1102. Havre. Soc. Havraise d'Études diver-

ses. 39. 1104. Le Mans. Soc. d'Agric. Sci. et Arts. 39. 1105. Le Puy. Soc. d'Agric. Sci. Arts et

Commerce. 39.

- 1106. Lille. Comité Flamand de France. 39. 1240. Tarbes.
  1107. Soc. des Sci. de l'Agric. et des
  Arts. 39. 1241. Toulon.
- 1109. Limoges. Soc. des Sci. Agric. et Arts. 1110. Lons-le-Sauln'er. Soc. d'Emulation

du Jura. 39.

- 1111. Lyon. Acad. des Sci. Belles-Lettres et Arts. 39.
- 1114. Soc. Linnéenne. 39.
- 1116. Macon. Soc. des Arts, Belles-Lettres d'Agric. 39.
- 1117. Marseille. Acad. des Sci. Lettres et Arts. 39.
- 1122. Mende. Soc. d'Agric. Indust. Soi. et Arts. 39.
- 1123. Montauban. Soc. des Soi. Agric. et Belles-Lettres. 39.
- 1124. Montbeliard. Soc. d'Emulation. 40.
- 1126. Montpellier. Acad. des Sci. et Lettree. 40.
- 1131. Moulins. Soc. d'Emulation. 40.
- 1133. Nancy. Acad. de Stanislas. 40.
- 1134. Nantes. Soc. Acad. de Nantes. 40.
- 1137. Nice. Soc. des Lettres, Sci. et Arts. 40.
- 1138. Nimes. Acad. du Gard. 40.
- 1140. Orleans. Soc. d'Agricult. Sci. Belles-Lettres et Arts. 40.
- 1163. Paris. Institut de France. 41.
- 1172. Minist. des Lettres, de Soi. et Beaux-Arts. 41.
- 1211. Soc. Philomatique. 42.
  1214. Perigueux. Soc. d'Agricult. Sci. et
- Arts. 42.
  1215. Perpignan. Soc. Agric. Sci. et Lit. 42.
- 1216. Poitiers. Soc. d'Agric. Belles-Lettres, Sri. et Arts. 42.
- 1218. Poligny. Soc. d'Agricult. Sci. et Arts. 42.
- 1219. Privas. Soc. des Sci. Hist. Nat. 42.
- 1221. Reims. Acad. des Sci. Belles-Lettres et Arts. 42.
- 1227. Rochefort. Soc. d'Agric. Belles-Lettres, Soi. et Arts. 43.
- 1228. Rouen. Acad. des Sci. Belles-Lettres et Arts. 43.
- 1231. Soc. d'Emulation du Comm. et de l'Industrie. 43.
- d'Hist. Nat. 43. 1236. Saint-Quentin. Soc. Acad. des Sci.
- Arts, Belles-Let. et Agric. 43. 1359. 1239. Soissons. Soc. des Sci. Belles-Lettres et Arts. 43.

- 1240. Tarbes. Soc. Acad. des Hautes-Pyrénées. 43.
- 1241. Toulon. Soc. Académique. 48.
- 1242. Toulouse. Acad. des Sci. Inscript. et Belles-Lettres. 43.
- 1243. Acad. des Jeux Fior. 43.
- 1247. Tours. Soc. d'Agric. des Soi. des Arts et Belles-Lettres. 43.
- 1248. Troyes. Académie de l'Aube. 43.
- 1249. Soc. d'Agricult. Sci. Arts et Belles-Lettres. 43.
- 1251. Valenciennes. Soo. d'Agric. Sci. et . Arts. 43.
- 1252. Vannes. Soc. Poly. du Morbihan. 43.
- 1253. Versailles. Soo. d'Agric. et des Arts de Seine et Oise. 43.
- 1255. Versoul. Soc. d'Agric. Soi. et Arts. 44.
- 1256. Vitry-le-François. Soc. Sci. et Arts.
- 1257. Areszo. Accad. Valdarnese del Poszio. 44.
- 1259. Bergamo. Ateneo. 44.
- 1261. Bologna. Accad. delle Sci. dell' Istituto. 44.
- 1270. Brescia. Ateneo. 44.

1308.

- 1273. Faenza. Soc. Sci. e Letteraria. 44.
- 1289. Florence. R. Accad. della Crusca. 45.
- 1296. Genoa. Accad. delle Sci. Lettere ed Arti. 45.
- 1303. Soc. di Lettere e Conversaz. Scientifiche. 45.
- 1305. Lucca. R. Accad. dei Filomati. 45.
- 1306. R. Accad. di Sci. Lettere ed Arti. 45.
- 1307. Milan. Accad. Fisio-med.-statis. 45.
  - Accad. Sci.-Letteraria. 45.
- 1309. Ateneo di Sci. Let. ed Arti.
- 1333. Modena. Accad. di Sci. Lettere ed Arti. 46.
- 1335. Soc. Ital. delle Sci. 46.
- 1340. Maples. Accad. Pontaniana. 46.
- 1348. R. Accad. delle Sci. Belle Lettere. 46.
- 1349. R. Istit. d'Incorag. Sci. Nat. Econom. Tecnol. 46.
- 1353. Soc. Reale di Napoli. 46.
- 1234. Saint-Lo. Soc. d'Agric. d'Archéol. et 1356. Padua. R. Acad. di Sci. Lettere ed d'Hist. Nat. 43. Arti. 46.
  - 1357. Palermo. Accad. di Sci. e Let. 46.
  - 1359. R. Istit. d'Incorag. di Agric.
    Arti. 46.
  - 1364. Pavia. Accad. Malaspina. 47.

de l'Étranger. 41.

1485. Dublin. Quarterly Journ. of Sci. 50.

1370. Pistoja. R. Accad. di Sci. Lettere ed i	1710 Massimaham Tit and Dhil Con St
Arti. 47.	1732. Ryde. Philosoph. and Sci. Soc. 57.
1371. Ravenna. Soc. Ravennate. 47.	1739. Sheffield. Lit. and Philos. Soc. 57.
1380. Rome. R. Accad. dei Lincei. 47.	1741. Southampton. Hartley Instit. 57.
1382. Siena. R. Accad. del Fisiocritici. 47.	1742. Lit. Phil. Soc. 57.
1386. Turin. Accad. R. delle Sci. 47.	1744. Swansea. R. Institut. 57.
1400. Venice. Atteneo Veneto. 47.	1748. Tenby. Cambrian Institute. 57.
1404. R. Istit. di Sci. Lett. ed Arti.	1750. Truro. R. Instit. Cornwall. 57.
48.	1752. Whitby. Lit. and Philos. Soc. 58.
1406. Vicensa. Accad. Olimpica. 48.	1758. York. Philosophical Society. 58.
1408. Lisbon. Acad. R. das Sci. 48.	1774. Constantinople. Ottoman Sci. Soc. 58.
1411. Recola Medico-cirurgica. 48.	1776. Alexandria. Inst. Égyptienne. 59.
1428. Madrid. Acad. de las tres Nobles	1780. Algiers. Soc. de Clim. Sci. Phys. et
Artes. 48.	Nat. 59.
1432. R. Acad. de Ciencias. 48.	1787. Grand Cairo. The Egyptian Soc. 59.
1439. Aberdeen. Philosophical Soc. 49.	1789. Mauritius. R. Soc. Arts and Sci. 59.
1449. Belfast. Belfast Institution. 49.	1796. Batavia. Gen. van Kunsten en Weten-
1453. Nat. Hist. and Phil. Soc. 49.	schappen. 59.
1455. Birmingham. Nat. Hist. and Micro.	1808. Bombay. Royal Asiatic Soc. 60.
Soc. 49.	1809. Calcutta. Asiatic Society. 60.
1461. Bristol. Instit. Advanc. of Sci. Lit.	1816. Colombo. Royal Asiatic Soc. 60.
Fine Arts. 49.	1818. Hong Kong. Royal Asiatic Soc. 60.
1468. Cambridge. Philosophical Soc. 50.	1827. Shanghai. R. Asiatic. Soc. China. 60.
1472. Devonshire. Assoc. Advanc. Sci.	1829. Adelaide. Adelaide Phil. Soc. 60.
Lit. and Art. 50.	1836. Hobarton. R. Soc. of Tasmania. 61.
1480. Cork. R. Cork Instit. 50.	1848. Melbourne. R. Soc. of Victoria. 61.
1494. Dublin. R. Society. 50.	1852. Sydney. Philosophical Soc. 61.
1496. R. Irish Academy. 50.	1855. Auckland. Auckland Institute. 61.
1514. Edinburgh. R. Physical Soc. 51.	1858. Christohurch. Philosoph. Instit. of
1516. R. Soc. 51.	Canterbury. 61.
1530. Glasgow. Philosophical Soc. 51.	1859. Nelson. Assoc. Prom. Sci. Ind. 61.
1534. Hull. Lit. Philos. Soc. R. Instit. 52.	1860. Institute. 61.
1535. Subscription Library. 52.	1861. Otago. Institute. 61.
1541. Leamington. Philosoph. Soc. 52.	1862. Wellington, New Zealand Iust. 61.
1543. Leeds. Philosoph. Lit. Soc. 52.	1864. Philosophical Soc. 61.
1546. Leicester. Lit. and Philos. Soc. 52.	1869. Buenos Ayres. Acad. des Sci. 62.
1550. Liverpool. Archi. Archæ. Soc. 52.	1873. Caracas. Soc. de Ciencias Fiscias y
1556. Lit. and Philo. Soc. 52.	Nat. 62.
1561. R. Institution. 52.	1885. Habana. R. Acad. de Cienc. Méd.
1576. London. Brit. Assoc. for the Advanc.	Fiscias y Nat. 62.
Sci. 53.	1897. Mexico. Soc. Humboldt. 63.
	1902. Port of Spain. Sci. Ass. of Trinidad.
1623. Linnman Soc. 54.	63.
1625. London Inst. 54.	1
1646. Post-Off. Lib. Lit. Ass. 54.	
1661. R. Institut. 55.	203. Science in General (Jour-
1666. R. Soc. of London. 55.	nals).
1667. United Service Instit. 55.	1157. Paris. Cosmos. 41.
1684. Victoria Institute. 55.	1167. Journal des Savants. 41.
1694. Manchester. Lit. and Phil. Soc. 56.	
1697. Soi. Student's Ass. 56.	1
	MOTHO COUNTY OF IS ITALICO

1703. Newcastle-upon-Tyne. Liter. and

Philosoph. Soc. 56.

- 1615. London. Journ. of Applied Sci. 54. | 216. State 1624. L. E. D. Philos. Magazine. 54.
- 1645. Popular Science Rev. 54. 1647. Quar. Journ. of Sci. 54.
- 204. Science, Moral and Political. See Moral.
- 205. Science, Natural. See Natural.
- 206. Science, Physical. See Physical.
- 207. Science, Social. See Social.
- 203. Science and Belles-Lettres. 6. Götheborg. R. Soc. of Sci. and Belles-Lettres. 1.
- 209. Scientific Associations. See Science.
- 210. Shakespeare. See Literature.
- 211. Sheep.
- 745. Prag. Schafzüchter-Ver. Böhmen. 28.
- 212. Shipbuilding. See Naval Science.
- 213. Silk Culture, The.
- 1130. Montpellier. Soc. Gén. d'Encourage. Sericiculture. 40.
- 1181. Paris. Rev. de Sericiculture comparée. 41.
- 1670. London. Silk Supply Assoc. 55.
- 214. Smithsonian Agents. See Agents.
- 215. Social Science.
- 1. General. Assoc. Inter. Sci. Soc. 1. 995. Liège. Conseil de Salubrit publique. 35.
- 1633. London. Assoc. Prom. of Soc. Sci. 54.

- Governments. See Governments.
- 217. State, Ministry of. See Ministry.
- 218. Statistics. See also Geography.
  - 3. General. Cong. Inter. Statistique. 1.
  - 16. Stockholm. Cent. Bur. Statis. 2.
  - 59. Copenhagen. Statis. Bureau. 3.
- 205. St. Petersburg. Statis. Comm. 10.
- 237. Amsterdam. Statis. Assoc. 12.
- 244. The Hague. Bureau Statis. 12.
- 348. Berlin. K. P. Statist. Bureau. 16.
- Statis. Cen.-Archiv. 17.
- 394. Bremen. Bureau für Statistik. 17.
- 433. Darmstadt. Cen.-Stelle Landes-Stat. 19.
- 460. Dresden. Statistisches Bureau. 19.
- 578. Jena. Statistisches Bureau. 23. 647. Leipzig. Statistisches Bureau. 25.
- 690. München. K. Statis. Bureau. 26.
- 730. Pesth. Statistical Bureau. 27.
- 767. Schwerin. Statis. Bureau. 29.
- 834. Wien. Statis. Central-Commis. 31.
- 880. Bern. Eidgen. Statis. Bureau. 32.
- 954. Brussels. Com. Cen. de Statis. 34.
- 1100. Grenoble. Soc. de Statistique. 39.
- 1169. Paris. Min. des Affairs Étrang. 41.
- 1197. Soc. Fr. de Statist. Univ. 42.
- 1213. Soc. de Statistique. 42.
- 1295. Florence. Ufficio di Statis. Gen. 45.
- 1610. London. Instit. of Actuaries. 54.
- 1678. Statistical Society. 55.
- 604. Klagenfurt. Kärnt. Seiden.-Ver. 24. 1771. Constantinople. Bureau de Stat. 58.
- 737. Potsdam. Ver. Beförd. des Seid. 28. 1874. Buenos Ayres. Statist. Bureau. 62.
  - 1891. Lima. Statistical Bureau. 62.
  - 219. Stenography.
  - 368. Berlin. Stenograph. Verein. 17.
  - 220. Surgery. See Medicine.
  - 221. Surveying. See Topography.
  - 222. Technology and Polytechnics.
    - 40. Christiania. Polytechnic Soc. 2.

```
63. Copenhagen. Polytech. School. 3.
 125. Moscow. Soc. of Old Rus. Arts. 6.
 157. Riga. Technical Society. 8.
 178. St. Petersburg. Imp. Tech. Inst. 9.
                       Tech. Soc. 10.
 317. Bairenth. Polytechnische Ges. 15.
 332. Berlin. Ver. für Fab. von Ziegeln. 16.
 356.
              Polytechnische Ges. 16.
 437. Darmstadt. Polytech. Schule. 19.
 452. Dresden. König. Poly. Schule. 19.
 559. Hannover. K. Polytech. Schule. 22,
 584. Karlsruhe. Bad. Poly. Schule. 23.
 640. Leipzig. Polytechnische Ges. 25.
 695. München. Polytechnischer Ver. 27.
 842. Wien. Polytechnische Ges. 31.
 858. Würzburg. Poly. Central-Ver. 32.
 894. Geneve. Société des Arts. 33.
 917. Zürich. Polytechnische Schule. 33.
1156. Paris. Cons. des Arts et Métiers. 41.
              Ecole Polytechnique. 47.
1161.
1212.
              Soc. Polytechnique. 42.
1301. Genoa. R. Ins. Teon. di Marina. 45.
1314. Milan. Instituto Tecnico. 45.
1328.
              Soc. d'Incoragg. Arti e Mes-
                  tieri. 46.
1360. Palermo. R. Istituto Tecnico. 46.
1398. Udine. R. Istituto Tecnico. 47.
1413. Lisbon. Escola Polytechnica. 48
1424. Oporto. Acad. Polytechnica. 48.
1504. Edinburgh. Watt Inst. and School
                     of Arts. 51.
1515.
                   R. Scot. Soc. of Aris. 51.
1521. Falmouth. R. Corn. Poly. Soc. 51.
1559. Liverpool. Polyteconic Soc. 52.
1590. London. Dept. of Prac. Art. 53.
1608.
                 Great Seal Patent Office. 53.
1674.
                 Soc. for the Encour. of Arts,
                  Man. and Com. 55.
1714. Nottingham. School of Art. 56.
1889. Kingston, R. Soc. Arts of Jamaica, 62,
```

## 223. Telegraphy.

4. General. Con. Télég. Internat. 1. 1144. Paris. Admin. des Lignes Télég. 40. 1883. Habana. Inspec. Gen. de Teleg. 62.

224. Thermal Waters. See Baths.

225. Topography. See also Statistics.

208. St. Petersburg. Topog. Bureau. 10, 766. Schwerin. Landes- Vermessungs Commiss. 29.

790. Stuttgart. K. Statistisch-topograph. Bureau. 29.

1741a. Southampton. Ordnance Trigonom. Survey. 57.

1817. Dehra Doon. Trigon. Surv. of India. 60.

1914. Santiago. El Plano Topogr. 62.

226. Trade. See Industry.

227. Trade, Free. See Free Trade.

228. Universities and Colleges (including Academies, etc.). See also Schools.

8. Lund. Royal University. 1.

21. Upsala. Royal University. 2.

29. Christiania. Universit. 2.

70. Copenhagen. Universit. 4.

33. Dorpat. University. 4.

87. Helsingfors. K. Alex. Universit. 4.

94. Kasan. Imp. University. 5.

98. Kharkow. University. 5.

100. Kiew. Univ. of the Holy Vladimir. 5.

114. Moscow. Imp. University. 6.

130. Roumianzovskaja Biblioteka i Mouzey. 6.

144. Odessa. University. 7.

177. St. Petersburg. Imp. University. 9.

187. Naval Academy. 9.

224. Warsaw. Imp. University. 11.

231. Amsterdam. R. Acad. of Sci. 11.

250. Groningen. Acad. Groningana. 12. 263. Leiden. Acad. Lugduno-Batava. 13.

271. Stolp's Legacy. 13.

279. Utrecht. Acad. Rheno-Trajectina. 14. 286.

Hoogsechool. 14.

309. Arnstadt. Fürnstl. Gymnasium. 15.

351. Berlin. K. Universität. 16.

385. Bonn. Universität. 17.

409. Breslau. Universität. 18.

478. Erlangen. Universität. 20.

491. Freiburg. Universität. 20.

498. Giessen. Universität. 21.

514. Göttingen. Universität. 21.

527. Greifswald. Universität. 21.

539. Halle. Universität. 22.

564. Heldelberg. Universität. 23.

572. Innsbruck. Universität. 23.

579. Jena. Universität. 23.

599. Kiel. Universität, 24.

616. Königsberg. Universität. 24.

```
649. Leipzig. Universität. 25.
 673. Marburg. Universität. 26.
 697. München. Universität. 27.
 728. Pesth. Hungarian University.
                                   27.
 746. Prag.. Universität. 28.
 760. Rostock. Universität. 28.
 802. Tübingen. K. Universität. 30.
 845. Wien. Universität. 31.
 860. Würzburg. Universität. 32.
 878. Basel. Universität. 32.
 836. Bern. Universität. 32.
 924. Zurich. Universität. 33.
 950. Brussels. Université. 34.
 991. Ghent. Université. 35.
1003. Liege. Université. 36.
1007. Louvain. Université Catholique.
1269. Bologna. Università. 44.
1280. Plorence. Istituto di Studi Supe. 44.
1302. Genoa. Università. 45.
1337. Modena. Università. 46.
1354. Naples. Università. 46.
1366. Pavia. R. Università.
1369. Pisa. Università. 47.
1383. Siena. Università Osservatorio. 47.
1396. Turin. Università. 47.
1403. Venice. Mechitaristen-Collegium. 48.
1407. Coimbra. Universidade. 48.
1440. Aberdeen. University. 49.
1454. Belfast. Queen's College. 49.
1459. Boston. Working Men's Col. 49.
1470. Cambridge. University. 50.
1482. Dublin. Catholic College. 50.
1486.
               Univ. Philos. Soc. 50.
1491.
               Trinity College. 50.
1518. Edinburgh. University. 51.
1519. Eton. Rton College. 51.
1523. Galway. Library Queen's Col. 51.
1524. Glasgow. Andersonian Inst. 51.
1531.
                 University. 51.
1683. London. University College. 55.
1688. Londonderry. Magee College. 56.
1693. Manchester. Independ. Coll. 56.
1725. Peebles. The Chambers Instit. 57.
1734 St. Andrews. University. 57.
1743. Stonyhurst. Stonyhurst College. 57.
1760. Athens. National University. 58.
1769. Constantinople. Amer. College. 58.
1794. Allahabad. Mission College. 59.
1795. Ceylon. Jaffna College. 59.
```

1800. Beirut. Syrian Protest. College. 59.

1801. Benares. Sanscrit College. 59.

1904. Bombay. University. 60.

1849. Melbourne. University. 61.

1854. Sydney. University. 61. 1878. Chuquisaca. University. 62. 1880. Georgetown. Queen's College. 1888. Habana. R. Universidad. 62 1892. Lima. University. 62. 1911. San Jose. University. 63. 1919. Santiago. Universidad. 63. 229. Universities, Libraries of. See Universities. 280. Universities, Museums of. See Museums. 231. Universities, Observatories of. See Observatories. 232. Useful Knowledge. See Industry. 233. Utility. See Amusement. 234. Veterinary Science. 60. Copenhagen. Vet. Agric. School. 3. 68. Veterinary Journ. 4. 74. Veterinary Society. 4. 84. Dorpat. Veteriuär-Schule. 4. 99. Kharkow. Veterinary School. 4. 285. Utrecht. Rijks Vecartenijschool. 14. 315. Augsburg. Woch. für Thierheilk und Viehzucht. 15. 1093. Douai. Assoc. Vétérinaire 1204. Paris. Soc. Imp. Cent. de Méd. Vétér. 42. 1324. Milan. R. Istituto Veterinario. 45. 1352. Naples. R. Scuola di Med. Vet. 46. 1392, Turin. R. Scuola di Med. Veter. 47. 235. Vine. See Wine. 236. War, Ministry of. See Military Affairs.

287. Watchmaking.

905. Lausanne. Soc. Industrielle d'Horlo-

gerie. 33.

1507. Edinburgh. Horological Soc. 51.

1579. London. Brit. Horological Inst. 53.

238. Welfare, Provincial and State; Economy.  30. Christiania. Soc. Prog. Pros. Nor. 2. 41. Soc. Devel. Pop. Instr. 2. 132. Moscow. Slavonic Committee. 7. 204. St. Petersburg. Slavonic Com. 10. 234. Amsterdam. Soc. for the Benefit of all Classes. 11. 287. Zwolle. Soc. Prom. of Prov. Wel. 14. 327. Berlin. Ver. Wohl der Arbeit Klas. 15. 475. Erfurt. Akad. Gemein. Wissen. 20. 934. Antwerp. Soc. de Vlaemsc. Vri. 34. 1331. Milan. Soc. Patriotica. 46. 1659. London. R. Humane Society. 55.	481. Frankfurt-am-Main. Malakozoolog. Ges. 20. 484. Zoologis. Ges. 20. 551. Hamburg. Zoolog. Gesellschaft. 22. 591. Kassel Malacozool. Blätter. 23. 643. Leipzig. Zeitschrift für Zoologie. 25. 756. Regensburg. Zool. Min. Ver. 29. 890. Geneve. Association Zoolog. 32. 937. Antwerp. Soc. R. de Zoologie. 34. 968. Brussels. Soc. Malacoiog. 35. 977. Soc. R. de Zool. d'Horticult. et d'Agrement. 35. 1262. Bologna. Arch. Zoolog. 1'Anatom. l'isiologia. 44.
<ul> <li>239. Wine Culture.</li> <li>784. Stuttgart. Ges. Weinverbesser. 29.</li> <li>240. Zoology. See also Botany, Mineralogy, Museums, Ornithology.</li> </ul>	Fisiologia. 44. 1497. Dublin. R. Zool. Soc. of Ireland. 50.
	375. Berlin. Zoologischer Garten. 17.

## SMITHSONIAN MISCELLANEOUS COLLECTIONS.

**-- 24**5 -

## CHECK LIST

OF.

## **PUBLICATIONS**

OF THE

# SMITHSONIAN INSTITUTION,

JULY, 1872.

SENT FREE BY MAIL ON RECEIPT OF THE PRICES AFFIXED.



WASHINGTON, D.C.

• . •

## CHECK LIST

01

## PUBLICATIONS OF THE SMITHSONIAN INSTITUTION,

To July, 1872.

Where no price is affixed the work cannot be furnished.

Publications marked * do not appear in the Contributions, Collections, or Reports.

No.	Author.	Title.		PAGES.	DATE.	
A	*******	Journal of Regents,	8vo.#	82	1846	
В		Report of Organization Committee	8vo.#	82	1847	
C		Digest of Act of Congress,	8vo.#	8	1847	
D	Dallas, G. M.	Address at Laying Corner Stone,	8 <b>v</b> o.#	8	1847	
K	Henry, Jos.	Exposition of Bequest,	8vo.#	8	1847	
F		First Report of Secretary,	8 <b>v</b> o.#	48	1848	
G	********	Report of the Institution,	8 <b>vo.</b> #	<b>3</b> 8	1847	
H	······································	Second Report of Institution,	8vo.#	208	1848	
I		Third Report of Institution,	8 <b>vo.</b> #	64	1849	
J		Programme of Organization,	4to.#	4	1847	
K		Correspondence, Squier & Davis,	8 <b>v</b> o.#	8	1848	
L		First Report of Organization Committee,	8 <b>v</b> o.#	8	1846	
M	••••••	Reports of Institution up to Jan. 1849,	8 <b>v</b> o.#	72	1849	
N		Officers, Regents, Act, &c.,	8vo.#	14	1846	
0		Act to establish Smithsonian Institution,	8 <b>v</b> o.#	8	18 <b>4</b> 6	
P	Owen, R. D.	Hints on Public Architecture,	4to.*	140	1849	
Q		Check List of Periodicals,	4to.*	28	1853	
1	Squier & Davis,	Ancient Monuments of Mississippi Valley,	S. C. 1,	346	1847	
2	*******	Smithsonian Contributions to Knowledge,	S. C. 1,	346	1848	

No.	AUTHOR.	Title.		PAGES.	DATE.	PRIOR.
8	Walker, S. C.	Researches, Planet Neptune	8. C. 11,	60	1850	
4	Walker, S. C.	Ephemeris of Neptune for 1848,	8. C. 11,	8	1849	
5	Walker, S. C.	Ephemeris of Neptune for 1849,	8. C. 11,	82	1849	
6	Walker, S. C.	Ephemeris of Neptune for 1850,	8. C. 11,	10	1850	
7	Walker, S. C.	Ephemeris of Neptune for 1851,	S. C. 11,	10	1850	
8	Downes, John	Occultations in 1848,	4to.#	12	1848	
9	Downes, John	Occultations in 1849,	4to.#	24	1848	
10	Downes, John	Occultations in 1850,	4to.#	26	1849	
11	Downes, John	Occultations in 1851,	S. C. 11,	26	1850	
12	Lieber, Francis	Vocal Sounds of L. Bridgeman,	8. C. 11,	82	1850	1.00
13	Ellet, Charles	Physical Geography of U. S.	8. C. 11,	64	1850	2.60
14	Gibbes, R. W.	Memoir on Mosasaurus,	S. C. 11,	14	1850	
15	Squier, E. G.	Aboriginal Monuments of N. Y.	8. C. 11,	188	1850	4.00
16	Agassis, Louis	Classification of Insects,	8. C. 11,	<b>2</b> 8	1850	
17	Hare, Robert	Explosiveness of Nitre,	8. C. 11,	20	1850	.50
18	Gould, Jr., B. A.	Discovery of Neptune,	8₹0.#	56	1850	
19	Guyot, A.	Directions for Meteorological Observations,	8 <b>v</b> o.#	40	1850	
20	Bailey, J. W.	Microscopic Examination of Soundings,	S. C. 11,	16	1851	2.00
21	*********	Annual Report of Smithsonian Institution for 1849	8 <b>v</b> o.	272	1850	
22	Gray, Asa	Plante Wrightians,	8. C. 111,	146	1852	
23	Bailey, J. W.	Microscopic Observations in S. Carolina, Georgia, and Florida,	8. C. 11,	48	1851	1.00
24	Walker, S. C	Ephemeris of Neptune, 1852. Appendix I,	8. C. 111,	10	1853	
<b>2</b> 5	Jewett, Chas. C.	Public Libraries of United States,	8vo.#	210	1851	.50
26		Smithsonian Contributions to Knowledge,	S. C. 11,	464	1851	12.00
27	Booth, J. C. and Morfit, C.	Improvements in Chemical Arts,	M. C. 11,	216	1852	1.00
28		Annual Report of Smithsonian Institution for 1850,	8 <del>v</del> o.	326	1851	
29	Downes, John	Occultations in 1852,	8. C. 111,	34	1851	

No.	AUTHOR.	Title.		PAGES	DATE.	PRICE.
80	Girard, Charles	Fresh-Water Fishes of N. America	8. C. 111,	80	1851	1.50
31	Guyot, A.	Meteorological Tables,	M. C. 1,	212	1852	
32	Harvey, Wm. H.	Marine Algo of North America. Part I,	8. C. 111,	152	1852	6.00
83	Davis, Chas. H.	Law of Deposit of Flood Tide,	S. C. 111,	14	185 <b>2</b>	
84	********	Directions for Collecting Speci- mens,	M. C. 11,	40	1859	free
<b>3</b> 5	Locke, John	Observations on Terrestrial Mag- netism,	8. C. 111,	80	1852	
36	Secchi, A.	Researches on Electrical Rheometry,	8. C. 111,	60	1852	
87	Whittlesey, Ch.	Ancient Works in Ohio,	8. C. 111,	20	1851	
<b>38</b>	********	Smithsonian Contributions to Knowledge,	8. C. 111,	564	1852	1 <b>2</b> .00
89	********	Smithsonian Contributions to Knowledge,	8. C. 1v,	426	1852	12.00
40	Riggs, S. R.	Dakota Grammar and Dictionary,	8. C. 1 <b>v</b> ,	414	1852	
41	Leidy, Joseph	Extinct American Ox,	8. C. <b>▼</b> ,	20	1852	1.00
42	Gray, Asa	Plante Wrightians. Part II,	8. C. v,	120	1853	
43	Harvey, Wm. H.	Marine Algee of North America. Part II,	8. C. ▼,	262	1853	10.00
44	Leidy, Joseph	Flora and Fauna within Living Animals,	S. C. ▼,	68	1853	2.00
45	Wyman, Jostries	Anatomy of Rana Pipiens,	8. C. v,	52	1853	1.00
46	Torrey, John	Plantes Fremontianes,	8. C. VI,	24	1853	1.50
47	Jowett, Chas. C.	Construction of Catalogues of Libraries,	8vo.*	108	1853	1.00
48	Girard, Charles	Bibliotheca Americana Historico Naturalis,	8vo.#	68	1852	
49	Baird, S. F. and Girard C.	Catalogue of Serpents,	M. C. 11,	188	1853	1.00
50	Stimpson, Wm.	Marine Invertebrata of Gr. Manan	8. C. v1,	<b>6</b> 8	1853	1.50
51	******	Annual Report of Smithsonian Institution for 1851,	8vo.	104	1852	
52	Coffin, Jas. H.	Winds of the Northern Hemisphere,	S. C. v1,	200	1853	3.00
53	Stanley, J. M.	Portraits of N.American Indians,	M. C. 11,	76	1852	.50
54	Downes, John	Occultations in 1853,	8. C. vi,	36	1853	.30

No.	Author.	Title.		PAGES	DATE.	PRIOR.
55		Smithsonian Contributions to Knowledge,	S. C. v,	<b>53</b> 8	185 <b>3</b>	12.00
56		Smithsonian Contributions to Knowledge,	8. C. vi,	476	1854	12.00
57		Annual Report of Smithsonian Institution for 1852,	8 <del>v</del> o.	96	1853	
58	Leidy, Joseph	Ancient Fauna of Nebraska,	8. C. vi,	126	1853	5.00
59	Chappelsmith, J.	Tornado in Indiana,	8. C. v11,	12	1855	.25
60	Torrey, John	Batis Maritima,	8. C. vī,	8	1853	1.00
61	Torrey, John	Darlingtonia Californica,	8. C. <b>v</b> ī,	8	1853	
62	Melsheimer, F.E.	Catalogue of Coleoptera,	8₹0.#	190	1853	2.00
63	Bailey, J. W.	New Species of Microscopic Organisms,	8. C. ¥11,	16	1854	.50
64		List of Foreign Correspondents of Smithsonian Institution,	<b>M</b> . C.	16	1856	
65	••••••	Registry of Period. Phenomena,	folio,#	4	1854	
66	•••••	Annular Eclipse, May 26, 1854	M. C.	14	1854	
67	•••••	Annual Report of Smithsonian Institution for 1853,	8 <b>v</b> o.	310	185 <b>4</b>	
68	Mitchell, B. R. & Turner, W. W.	Vocabulary of Jargon of Oregon,	8vo.#	22	1853	
69	*********	List of American Correspondents of Smithsonian Institution,	8 <b>v</b> o.#	16	1863	
70	Lapham, I. A.	Antiquities of Wisconsin,	8. C. <b>v</b> 11,	108	1855	6.00
71	Haven, S. F.	Archmology of the United States,	8. C. v111,	172	1856	
72	Leidy, Joseph	Extinct Sloth Tribe of N. America,	S. C. VII,	70	1855	3.00
73		Publications of Societies in Smithsonian Library,	8. C. vII,	40	1855	.25
74	••••••	Catalogue of Smithsonian Publications,	M. C. ▼,	52	1862	
75	••••••	Annual Report of Smithsonian Institution for 1854,	8 <del>v</del> o.	464	1855	2.00
76	******	Smithsonian Contributions to Knowledge,	8. C. <b>v</b> 11,	252	1855	12.00
77	••••••	Annual Report of Smithsonian Institution for 1855,	8 <del>v</del> o.	440	1856	2.00
78	•••••	Smithsonian Contributions to Knowledge,	8. C. <b>v</b> 111,	556	1856	12.00

No.	Author.	TITLE.		PAGES.	DATE.	PRICE.
79	Runkle, John D.	Tables for Planetary Motion,	8. C. 1x,	64	1856	1.00
80	Alvord, Benj.	Tangencies of Circles and Spheres,	S. C. ¥111,	16	1856	1.00
81	Olmsted, D.	Secular Period of Aurora Borealis	8. C. VIII,	52	1856	1.00
82	Jones, Joseph	Investigation on A. Vertebrata,	S. C. VIII,	150	1856	1.50
83	Meech, L. W.	Relative Intensity of Heat and Light of the Sun,	S. C. 1x,	58	1856	1.25
84	Force, Peter	Auroral Phenomena in North Latitudes,	8. C. v111,	1 <b>22</b>	185 <b>6</b>	1.25
85	••••••	Publications of Societies in Smith- onian Library. Part II,	S. C. <del>V</del> 111,	<b>3</b> 8	1856	. 25
86	Mayer, Brantz	Mexican History and Archæology	S. C. 1x,	36	1856	1.00
87	Coffin, Jas. H.	Psychrometrical Tables,	M. C. 1,	20	1856	.25
<b>8</b> 8	Gibbs, W. and Genth, F. A.	Ammonia Cobalt Bases,	8. C. 1x,	72	1856	1.00
89	Brewer, Th. M.	North American Oology. Part I,	S. C. x1,	140	1857	5.00
90	Hitchcock, E.	Illustrations of Surface Geology,	8. C. 1x,	164	1857	4.00
91	********	Annual Report of Smithsonian Institution for 1856,	8 <b>v</b> o.	468	1857	
92	*******	Smithsonian Contributions to Knowledge,	S. C. 1x,	482	1857	12.0 <b>0</b>
93	*******	Meteorological Observations for 1855,	8 <b>v</b> o.#	118	1857	
94	Runkle, John D.	Asteroid Supplement to New Tables for $b\frac{(i)}{s}$ ,	S. C. 1x,	72	1857	1.00
95	Harvey, Wm. H.	Marine Alges of North America. Part III,	S. C. x,	142	1858	6.00
96	Harvey, Wm. H.	Marine Alges of North America. 3 parts complete,	4to.	588	1858	20.00
97	Kane, E. K.	Magnetic Observations in the Arctic Seas,	S. C. x,	72	1859	1.00
98	Bowen, T. J.	Yoruba Grammar and Dictionary,	8. C. x,	232	1859	4.00
99	••••••	Smithsonian Contributions to Knowledge,	S. C. x,	462	1858	12.00
100	Gillis, J. M.	Eclipse of the Sun, Sept. 7, 1858,	8. C. x1,	22	1859	.50
101	Hill Thos.	Map of Solar Eclipse, Mar. 15, '58,	8⊽0.#	8	1858	.15
102	Osten Sacken, R.	Catalogue of Diptera of North America,	M. C. 111,	112	1858	.75

No.	AUTHOR.	Title.		PAGES.	DATE.	PRIOR.
146	M'Clintock, Sir F. L.	Meteorological Observations in the Arctic Seas,	8. C. x111,	164	1862	1.50
147	••••••	Annual Report of Smithsonian Institution for 1860,	8₹0.	448	1861	2.00
148	******	Directions for Meteorological Observations,	M. C. 1,	72	1860	free
149	••••••	Annual Report of Smithsonian Institution for 1861,	8 <del>v</del> o.	464	1862	
150	••••••	Annual Report of Smithsonian Institution for 1862,	8vo.	446	1863	2.00
151	••••••	Smithsonian Contributions to Knowledge,	S. C. <b>x</b> 111,	558	18 <b>63</b>	12.00
152	Carpenter, P. P.	Lectures on Mollusca,	8 <b>v</b> o.#	140	1861	
153	Guyot, A.	Tables, Meteorological and Physical,	M. C. 1,	638	1859	3.00
154	••••••	List of Foreign Correspondents of Smithsonian Institution,	M. C. ▼,	56	1862	
155	Whittlesey, Ch.	Ancient Mining on Lake Superior	8. C. x111,	34	1863	.50
156	Egleston, T.	Catalogue of Minerals,	M. C. v11,	56	1863	.50
157	••••••	Results of Meteorological Observations from 1854 to 1859,	4to.#	1270	1861	2.50
158	•	Smithsonian Miscellaneous Collections,	M. C. v,	774	1864	5.00
159	Mitchell, S. W. & Morehouse, G. R.	Anatomy and Physiology of Respiration in Chelonia,	8. C. xIII,	50	1863	1.00
160	Gibbs, G.	Instructions for Ethnology and Philology,	M. C. v11,	56	1863	.25
161	Gibbs, G.	Dictionary of the Chinook Jargon	M. C. v11,	60	1863	.50
162	Bache, A. D.	Magnetic and Meteorological Obs. at Girard Coll. Pt. IV, V,&VI,	8. C. xIII,	78	1862	1.00
163	••••••	Circular on History of Grass- hoppers,	M. C. 11,	4	1860	
164	••••••	Smithsonian Museum Miscellanea	M.C. v111,	88	1862	.50
165	Allen, H.	Monograph of the Bats of North America,	M. C. v11,	110	1864	.50
166	Bache, A. D.	Magnetic Survey of Pennsylvania	S. C. x111,	88	1863	1.00
167	Le Conte, Jnc. L.	New Species of North America Coleoptera,	M. C. vi,	180	1866	1.00
168	*******	Circular Relative to Birds from Middle and South America,	M.C. viii,	2	1863	·:

No.	Author.	Title.		PAGES.	DATE.	PRICE.
169	••••••	Smithsonian Miscellaneous Collections,	M. C. v1,	888	1864	5.0
170	•••••	Comparative Vocabulary,	4to.#	20	1863	fre
71	Loew, H.	Monograph of the Diptera of North America. Part II,	M. C. ▼1,	372	1864	2.5
72	Meek, F. B. and Hayden, F. V.	Palseontology of the Upper Missouri. Part I,	8. C. x1v,	158	1865	2.5
73	Dean, John	Gray Substance of the Medulla Oblongata,	8. C. xv1,	80	1864	2.5
74	Binney, W. G.	Bibliography of North American Conchology. Part II,	M. C. 1x,	302	1864	2.0
75	Bache, A. D.	Mag. and Met. Observ. at Girard Coll. Parts VII, VIII, & IX,	8. C. xıv,	72	1864	1.0
76	********	Circular, Collecting North American Shells,	M. C. 11,	4	1860	
77	********	Check List of Invertebrate Fos- sils of North America,	M. C. v11,	42	1864	.2
78	********	Circular to Entomologists,	M.C. v111,	2	1860	
79	••••••	Catalogue of Publications of So- cieties,	M. C. 1x,	596	1866	3.0
80	Draper, H.	Construction of a Silvered Glass Telescope,	8. C. xiv,	60	1864	1.0
81	Baird, S. F.	Review of American Birds in Smithsonian Museum,	м. с.	454	1866	2.0
82	*******	Results of Meteorological Observations from 1854–1859. Vol. II,	4to.#	546	1864	2.
83	*******	Check List of Invertebrate Fos- sils of North America,	M. C. v11,	34	1864	
.84		Smithsonian Contributions to Knowledge,	S. C. xiv,	490	1865	12.
85	••••••	List of Birds in Mexico, &c.,	8 <b>v</b> o.#	8	1863	
86	Bache, A. D.	Mag. and Met. Observ. at Girard College. Parts X, XI, & XII,	S. C. xiv,	42	1865	
87	••••••	Annual Report of Smithsonian Institution for 1863,	8 <b>v</b> o.	420	1864	
188	******	Annual Report of Smithsonian Institution for 1864,	8 <b>v</b> o.	450	1865	
189	Scudder, S. H.	Catalogue of Orthoptera of North America,	M.C. v111,	110	1868	1.
190	•	Queries Relative to Tornadoes,	M. C. x,	4	1865	fre

No.	Author.	Title.		PAGES.	DATH.	PRIOR.
191	*******	Smithsonian Miscellaneous Collections,	M. C. <b>v</b> 11,	878	1865	5.00
192	Leidy, Joseph	Cretaceous Reptiles of the U.S.,	S. C. XIV,	142	1865	4.00
193	••••••	Duplicate Shells from Expedition of Capt. Wilkes,	8 <b>v</b> o.#	4	1865	
194	Binney, W. G. & Bland, T.	Land and Fresh-Water Shells of North America. Part I,	M.C. <b>v</b> 111,	828	1869	2.00
195	*******	Mag. and Met. Observ. at Girard Coll. Pts. I—XII, complete,	4to.#	262	1866	3.00
196	Hayes, I. I.	Physical Observations in the Arctic Seas,	8. C. xv,	286	1867	5.00
197	Whittlesey, Ch.	Glacial Drift of Northwestern States,	8. C. xv,	<b>3</b> 8	1866	1.00
198	Kane, E. K.	Physical Observations in the Arctic Seas. Complete,	4te.#	340	1860	4.00
199	Newcomb, 5.	Orbit of Neptune,	8. C. xv,	116	1866	2.00
<b>2</b> 00	Conrad, T. A.	Check List of the Invertebrate Fossils of North America,	M. C. v11,	46	1866	.25
<b>2</b> 01	Stimpson, Wm.	Hydrobiins and Allied Forms,	M. C. v11,	64	1 <b>86</b> 5	.50
202	Pumpelly, R.	Geological Researches in China, Mongolia, &c.	S. C. xv,	173	1866	3.50
<b>2</b> 03		List of Works published by Smithsonian Institution,	M. C. ▼11.	12	1866	
204	Cleaveland, P.	Meteorological Observations, Brunswick, Me., 1867-1859,	S. C. xv1,	60	1867	1.00
<b>2</b> 05		Circular for Archmology and Eth- nology,	M.C. viii,	2	1867	free
206	•••••	Smithsonian Contributions to Knowledge,	S. C. xv,	620	1867	12.00
207		Relative to Scientific Investiga- tions in Russian America,	M.C. v111,	10	1867	free
<b>20</b> 8	Pickering, Chas.	Gliddon Mummy Case in Smith- sonian Institution,	S. C. xv1,	6	1869	.50
209		Annual Report of the Smithsonian Institution for-1865,	8 <b>v</b> o.	496	1866	
210		Arrangement of Families of Birds in Smithsonian Institution,	M.C. <b>v</b> 111,	8	1866	.10
<b>'2</b> 11	•••••	Smithsonian Contributions to Knowledge,	S. C. xv1,	498	1870	12.00

No.	AUTHOR.					
	AUTHUR.	Title.		PAGES	DATE.	PRICE
212	••••••	Smithsonian Miscellaneous Collections,	M.C. v111,	921	1869	5.00
213	. ********	Smithsonian Miscellaneeus Collections,	M. C. 1x,	898	1869	5.00
214	*******	Annual Report of Smithsonian Institution for 1866,	8 <b>v</b> o.	470	1867	2.00
<b>2</b> 15	********	Annual Report of Smithsonian Institution for 1867,	8 <b>v</b> o.	506	1868	
216	•••••••	Photograph Portraits of North American Indians,	8 <b>vo.</b> #	42	1867	.25
217	Hoek, M.	Meteoric Shower, 1867, Nov. 13,	8 <b>v</b> o.#	4	1867	.10
<b>2</b> 18	Morgan, L. H.	Systems of Consanguinity and Affinity,	S. C. xv1,	616	1869	12.00
219	Osten Sacken, R.	Monograph of Diptera of North America. Part IV,	M.C. v111,	358	1869	2.00
220	Swan, Jas. G.	Indians of Cape Flattery,	\$. C. xv1,	118	1869	2.00
221	Coffin, James H.	Orbit, &c., of Meteoric Fire Ball, July 20, 1860,	8. C. xv1,	56	1869	1.00
222	Schott, Chas. A.	Tables of Rain and Snow in United States,	8.C.xv111,	175	1872	8.90
223	Gould, B. A.	On the Transatlantic Longitude,	S. C. xvi,	110	1869	1.00
224	••••••	Annual Report of Smithsonian Institution for 1868,	8₹0.₩	473	1869	2.00
225	********	List of Foreign Correspondents of Smithsonian Institution,	8₹0.#	53	1869	.25
226	*******	List of Publications of Smithson- ian Institution,	8₹0.	84	1869	
227	Gill, Theod.	Families of Mollusks,	M. C. x,	49	1871	.25
228	•••••	Annual Report of Smithsonian Institution for 1869,	8 <b>v</b> o.	430	1871	1.00
229	••••••	Smithsonian Contributions to Knowledge,	S. C. xv11,	616	1871	12.00
230	Gill, Theod.	List of Families of Mammals,	M. C.			
231	Cope, E. D.	List of Families of Reptiles,	M. C.			
<b>2</b> 32	Stockwell, J. N.	Secular Variations of Orbits of Planets,	8. C. xviii	220	1872	2.00
233	Ferrel, Wm.	Converging Series, Ratio of Din- meter, and Circum. of Circles,	S.O.xviii,	6	1871	.50
234	Baird, S. F.	Circular Relative to Food Fishes,	M. C. x,	12	1871	free

No.	AUTHOR	Title.		PAGES	DATE.	PRICE.
<b>2</b> 35		Circular Relative to Thunder- storms,	M. C. x,	2	1871	free
236		Circular Relative to Altitudes,	M. C. x,	2	1871	free
237	********	Circular Belative to Lightning-rods,	M. C. x,	8	1871	free
<b>23</b> 8	Rhees, Wm. J.	List of American Libraries, and Public Institutions,	M. C. x,	256	1872	1.00
239	Harkness, Wm.	Magnetic Observations on the Monadnock,	S. C.XVIII	226	1872	2.00
<b>24</b> 0	Barnard, J. G.	Problems of Rotary Motion,	8. C.	42	1872	2.00
<b>24</b> 1	Wood, H. C.	Fresh-Water Algae of N. America,	s. c.	272	1872	7.50
242	Clark, H. J.	Lucernaries and their Allies,	s. c.			
243	••••••	List of Foreign Correspondents of Smithsonian Institution,	M. C. x,	63	1872	.50
244	••••••	Annual Report of Smithsonian Institution for 1870,	8 <b>v</b> o.	494	1871	1.00
<b>24</b> 5		Check List of Smithsonian Publications to July, 1872,	M. C. x,	21	1872	free
246		Smithsonian Contributions to Knowledge,	S.C.xviii	635	1878	12.0
247	Gill, Theod.	List of Families of Fishes,	M. C. x1,	96	1872	.25
248	Hilgard, A. W.	Geology of Lower Louisiana,	S. C. xix,	38	1872	2.00
249		Annual Report of Smithsonian Institution for 1871,	8 <del>v</del> o.	473	1872	1.00
<b>2</b> 50		Smitheonian Miscellaneous Col- lections,	M. C. x,	•••	1873	
<b>2</b> 51	Carpenter P. P	Monograph of Chitonides,				
<b>2</b> 52	Carpenter, P. P.	American Mollusca,	M. C. x,	446	1873	1.00
<b>2</b> 53	Tryon, G. W.	Monograph of Strepomatides,		<b></b>	l l	•••

## SYSTEMATIC LIST OF TITLES OF SMITHSONIAN PUBLICATIONS. >

The figures and letters refer to the number of the publication in the preceding list.

Smithsonian (	Contributi	ons to Know-	ı	Annual Report Smithsonian Institution	
ledge, 4to		vol. I.	2	" (13th) for 1858	109
10480, 400	"	vol. II.	26	" " (14th) for 1859	
46	"	vol. III.	88	" (16th) for 1860	
44	46	vol. IV.	39	" (16th) for 1861	
4	ш	vol. IV.	55	" (17th) for 1862	
4	44	vol. VI.	56	•	
	 u			(1014) 102 1000	
	- u	vol. VII.	76	(18th) for 1603	
	"	vol. VIII.	78	(2011) 101 1000	
	"	vol. IX.	92	(218t) for 1800	
-	4	vol. X.	99	(221) 101 1001	
	<b>.</b>	, vol. XL	111	·· (250) for 1800	
••		vol. XII.	112	(2311) 101 1000	
	4	vol. XIII.	151	(2041) 101 1010	
**	44	vol. XIV.	184	" (26th) for 1871	249
66	46	vol. XV.	206	ANATOMY AND PHYSIOLOGY.	
66	и	vol. XVI.	211		
44	*	vol. XVII.	229	DEAR, medulia oblongata	178
u	u	vol. XVIII.	246	Jowns, chemical and physiological in-	
Miscellaneous	Collection	ıs, 8vo.,		Vestigations	82
		vol. I.	122	LEIDY, flora and fauna living animals	44
	4	vol. II.	123	MITCHELL, venom of rattlesnake	
	64	vol. III.	124	MITCHELL and MOREHOUSE, chelonia	
"	44	vol. IV.	125	WYMAH, rana pipiens	45
4	44	vol. V.	158	Architecturil	
#	4	vol. VI.	169	Owen, hints public architecture	P
4	44	vol. VII.	191	owas, mass public architecture	-
4	44	vol. VIII.	212	ASTRONOMY.	
44	#6	vol. IX.	<b>2</b> 13	Annular colipse 1854	66
44	44	vol. X.	250	Davis, flood tide	83
Annual Repor	t Smithson	nian Institution		Downes, occultations 1848	8
•		(1st) for 1846	G	" " 1849	9
44	"	(2d) for 1847	Ħ	" " 1850	10
44	46	(3d) for 1848	ī	" " 1851	11
44	66	(4th) for 1849	21	" " 1852	29
44	"	(5th) for 1850		# # 1853	54
æ	66.	(6th) for 1851		4000	
4	u	• •		Gilliss, solar eclipse, Peru	
		(7th) for 1852		Gould, history of Neptune	18
u	(F17 "	st of bound ser		" transatlantic longitude	
		(8th) for 1853		HAYES, arctic observations	
u	u	(9th) for 1854		Hill, map solar collipse	
<b></b>		(10th) for 1855		KANE, astronomical observations arctic	
4		(11th) for 1856		5085	
••	u	(12th) for 1857		<u> </u>	
				58 13	

		une	199	Lieber, vocal sounds Laura Bridgeman	12
Runkle, pla		8	79	MAYER, Mexican archæology	86
. "	44 44	supplement	94	MITCHELL, vocabulary of jargon	68
		nets	<b>23</b> 2	Morgan, relationship circular	133
		ptune	3	" systems of consanguinity	218
" e <u>r</u>		ptune, 1848	4	Photographic portraits of Indians	216
4	"	1795-1849	5	Pickering, Gliddon mummy case	208
==	44	1850	6	Riggs, Dakota grammar and dictionary	
"	"	1851	7	Squier and Davis, ancient monuments,	
		1852	24	Mississippi valley	1
WHITTLESET	r, level of la	kes	119	" aboriginal monuments, New York	15
	BOTAN	<b>7.</b>		STANLEY, Indian portraits	53
GRAY Plant	ts Wrightia	næ, I	<b>2</b> 2	Swan, Indians of Cape Flattery	220
"	44 44 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	II	42	Weittleser, ancient mining, Lake Su-	
HARVEY. No	orth America	n marine alga,	74	perior	15 <b>5</b>
,		I.	32	" ancient works, Ohio	37
44	44	" II.	43	GEOLOGY AND PHYSICAL GEOGRAPHY.	
"	44	" III.	95		
44	44	" complete	96	RLLET, physical geography, Mississippi valley	
Torrey, bat	is maritima	•••••••••••	60	Hitgard, geology of lower Louisians	13
		alifornica	61	Hirchcock, surface geology	
		tianæ	46	PUMPELLY, geology China, Mongolia,	90
		omena	65	and Japan	ഹര
				WHITTLESEY, glacial drift	203
,	<b>.</b>	•••••••••••••••••••••••••••••••••••••••	~~1	Whitebasi, gravial dillib	191
	BIBLIOGRA			GENERAL NATURAL HISTORY.	
Binney, bib	liography oc	onchology, part		Circular for collecting birds	168
66		I.	144	44 44 eggs	
	"		172	" grasshoppers	
GIRARD, bit	oliography n	atural history,		" shells	
1851	• • • • • • • • • • • • • • • • • • • •	••••••	48	" to entomologists	
		m	47	Directions for collecting and preserving	
			25	specimens	34
		ithsonian Insti-		Hudson's bay circular	
T Marie Marie	dution	74, 203, 226,		LEIDY, flora and fauna within animals	44
tt Simi	rusonian exc	hanges, part I.	73	Museum miscellanea, numbers, labels,	
"	"	11.	85	eto	164
Publication		" to 1858 ieties in library	117	Register, periodical phenomena	65
		ution, 1866	170	Russian America circular	207
REER nuhl	in libraries	1000	119	GENERAL PHÝSICS OF THE GLOBE.	
, pub.		********************	110		
CHE	MISTRY AND T	rechnology.		HAYES, physical observations arctic seas KANE, " " "	
BOOTH and I	Morfit, chem	nical arts	27	mans,	198
GIBBS and G	enth, ammor	nia-cobalt bases	88	mathematics.	
HARE, explo	osiveness of	nitre	17	ALVORD, tangencies of circles	80
Ymn	HNOLOGY AND	Buttor oc		FERREL, converging series	
					-
Circular	uua grammar	and dictio ary	98	METEOROLOGY.	
Ginns Chi-	onseringy		205	Caswell, observations, Providence,	
4 com	www.jargon	-L-1	161	Rhode Island	103
" com	Parative Voc	abulary	170	CHAPPELSMITH, tornado	59
HAVE A	orokust met	ructions		Circular, altitudes	236
LAPHAN en	tionities 2212 tionities 2212	ology	71	" lightning rods	
	andmenes AAT	sconsin	70	" thunder-storms	235

Circular, tornadoes	PALMONTOLOGY.
CLEAVELAND, observations, Brunswick,	COMBAD, eocene fossils
Maine 20	Grang massagement
Coffin, meteoric fire-ball	Leidy, ancient fauna, Nebraska
" psychrometrical tables 8"	1
" winds, northern hemisphere 5	" cretaceous reptiles
Directions for meteorological observa-	OAMING BLOUDS,
tions19, 14	108811 VA 21
Force, record of auroras 8-	MEEK, cretaceous and jurassic fossils 178
Guvor, meteorological directions 1	miocone iossits
" tables31, 15	and mainer, perconsology, 110-
HAYES, arctic observations	V.60.00 1/4
HILDRETH, observations, Marietta, Ohio 12	
KANE, arctic observations 10	h have and
Loomis, storms 12	BARNARD, problems of rotary motion 240
McCLINTOCK, arctic observations 14	
MEECH, intensity sun's heat 8	
Meteorological results, 1854-59, vol. 1 15	
" " vol. 2. 18	1
Meteorological observations, 1855 93	1
November meteors 21	
Olmsted, autora 83	Takan Indu Ravabing.
SCHOTT, precipitation in rain and snow	BACHE, magnetic discussion, part I 113
in the United States 22	" " part II 121
SMITH, observations, Washington, Ar-	" " part III 132
kansas 13	" " parts IV. to VI 162
WEITTLESEY, level of lakes 115	parts VII. to IX. 175
•	" parts IX. to XII. 186
MICROSCOPY.	" complete 195
_	Bache, magnetic survey of Pennsylva-
Bailer, microscopic observations,	BACHE, magnetic survey of Pennsylva- nia
BAILEY, microscopic observations, southern States 23	BACHE, magnetic survey of Pennsylva- nia
Bailer, microscopic observations, southern States	BACHE, magnetic survey of Pennsylva- nia
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Bailey, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
BAILEY, microscopic observations, southern States	BACHE, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	Bache, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	Bache, magnetic survey of Pennsylvania
Balley, microscopic observations, southern States	Bache, magnetic survey of Pennsylvania

Fishes.	Radiates.
BAIRD, circular relative to food fishes 234	CLARE, lucernaris 242
GILL, list of families of fishes 247	
Girard, monograph, cottoids 30	Reptiles.
Insects.  Agassiz, classification of insects 16	BAIRD and GIRARD, catalogue of serpents 49 COPE, families of reptiles
Coleoptera, LE CONTE, classification 136	MITCHELL and Morreover, chelonia 159
" Kansas 126 " list 140	Shells.
" new species 167	BINNEY, bibliography North American
" MELSHEIMER, catalogue 62	conchology, part I. 142
Diptera, Law, monograph, part I 141	" " part II. 174
" " part II 171	Bunner, land and fresh water shells,
" OSTEN SACKEN, monograph,	part I. 194
part IV 219	" " " part II. 143
" ostalogue 102	" " " part III. 144
Lepidoptera, Monam, catalogue 118	CARPENTER, American mollusca 252
" " synopsis 133	" chitonids 251
Neuroptera, HAGRE, synopsis 134	" lectures on molluses 152
Orthoptera, Scudder, catalogue 189	Check list of shells 128
Manmals.	Circular for collecting shells 176
	Duplicate shells, exploring expedition. 193
ALLER, monograph North American	Gill, families of mollusks
bats	- ====, -=============================
BAIRD, catalogue mammals, 4to 105	1 * *
GILL, families of mammals 230	TRYON, monograph of strepomatidm 35

#### ALPHABETICAL INDEX

#### TO LIST OF THE

### PUBLICATIONS OF THE SMITHSONIAN INSTITUTION.

The reference figures and letters refer to the numbers of the publications in the preceding list.

Aboriginal monuments, N. Y 15	Binney, bibliography, conchology142,	174
Agassiz, classification insects 16	Binney, check list, shells	
Algæ, fresh-water, Wood 241	Binney, land and fresh-water shells	
Algs, Harvey32, 43, 95, 96	144,	194
Allen, monograph bats 165	Birds, arrangement of	210
Altitudes, circular 236	Birds, Baird, catalogue106,	
Alvord, tangencies 80	Birds, Baird, review	
Ammonia-cobalt bases, Gibbs & Genth. 88	Birds, circular for collecting	
Anatomy of Rana pipiens 45	Birds of Mexico, Central America, and	
Ancient fauna, Nebraska, Leidy 58	West Indies	185
Ancient mining, Lake Superior 155	Booth and Morfit, chemical arts	27
Ancient monuments, Mississippi valley 2	Bowen, Yoruba grammar and dictionary	98
Ancient works, Ohio	Brewer, N. A., Oology, part 1	89
Antiquities Wisconsin, Lapham 70	Bridgeman, Laura, Lieber	12
Archmology, circular 205	Brunswick, meteorological observations	204
Archmology, Mexican, Mayer 86		
Archeology of United States, Haven 71	Carpenter, check list, shells	128
Architecture, Owen on P	Carpenter, mollusca152, 251,	
Arctic observations97, 104, 129, 130, 196	Caswell, meteorological observations,	
198	Providence	103
Arkansas, meteorology 131	Catalogue, publications in library 117.	
Asteroid supplement, Runkle's tables. 94	Catalogue, publications of Smithsonian	
Astronomical tables, Runkle79, 94	Institution74, 203,	226,240
Aurora borealis, Olmsted	Central America, list of birds of	
Auroras, Force, record of 84	Chappelsmith, tornado,	59
	Check list, fossils177, 183,	200
Bache, magnetic discussion113, 121, 132,	Check list, shells	128
162, 175, 186, 195	Chelonia, Mitchell and Morehouse	159
Bache, magnetic survey, Pennsylvania 166	Chemical arts, Booth and Morfit	27
Bailey, microscopic observations20, 23, 63	Chemical investigations, Jones	82
Baird, catalogue birds106, 108	Chinook jargon, Gibbs	161
Baird, catalogue mammals 105	Chitonidæ, Carpenter	251
Baird, food fishes 234	Clark, lucernarise	242
Baird, review of birds, part 1 181	Cleaveland, meteorological observa-	
Baird and Girard, catalogue of serpents 49	tions, Brunswick, Maine	204
Barnard, rotary motion 240		221
Batis maritima, Torrey 60	Coffin, psychrometrical tables	87
Bats, monograph, Allen 165	Coffiu, winds, northern hemisphere	52
Bibliography, conchology, Binney142, 174		136
Bibliography, natural history 48	Coleoptera, Le Conte, Kansas	126
	17	

Coleoptera, Le Conte, list	140	Flora and fauna, Leidy	44
Coleoptera, Le Conte, new species			84
Coleoptera, Melsheimer, catalogue	62	Foreign correspondents, list of.64, 154, 25	25,
Comparative vocabulary		_	243
Conchology, Binney, bibliography142,	174	Fossil ox, Leidy	41
Congress, acts ofB. C. N. O.,	67	Fossils, check list, Conrad 2	
Conrad, check list, fossils, eocene	200	Fossils, check list, Meek177, 1	83
Consanguinity, systems of	218	Frémont, plants	46
Converging series, Ferrel	233	Genth and Gibbs, ammonia-cobalt bases	88
Cope, families of reptiles		Geology, China and Japan, Pumpelly 2	
Corbiculadæ, Prime			90
Correspondents, domestic69,	238	8,	14
Correspondents, foreign64, 154, 225,		Gibbs and Genth, ammonia-cobalt bases	
Cottoids, Girard	30	Gibbs, Chinook jargon 1	
Cretaceous fossils, Meek	177	Gibbs, ethnological instructions 1	
Cretaceous reptiles, Leidy	192	Gill, families of fishes 2	
		Gill, families of mammals	
Dakota grammar and dictionary	40	Gill, families of mollusks	
Dallas, address, corner-stone	D	Gilliss, solar eclipse, Peru	
Darlingtonia Californica, Torrey	61	Girard, Bibliography Nat. Hist	
Davis, flood-tide	33	Girard, cottoids	
Dean, medulla oblongata		Girard and Baird, catalogue, serpents	
Diptera, Low, monograph141,		Girard College, observations113, 121, 13	
Diptera, Osten Sacken, catalogue		162, 175, 186, 1	
Diptera, Osten Sacken, monograph 141,		Glacial drift, Whittlesey 1	
	219	Gliddon mummy-case, Pickering 2	
Directions, collecting specimens	34	Gould, Neptune	
Directions, meteorological observa-	- 40	Gould, transatlantic longitude 2	
tions		Grasshopper, circular 1	
Downes, occultations8, 9, 10, 11, 29		Gray, Plants Wrightians22,	
Draper, telescope in photography		Guyot, meteorological and physical	
Drift, Whittlesey	191	tables31, 1	153
Eclipse66, 100,	101	Guyot, meteorological directions19, 1	48
Eggs, circular			
Eggs, instructions for collecting		Hagen, synopsis neuroptera 1	34
Egleston, catalogue minerals		Haldeman, coleoptera	62
Electrical rheometry, Secchi	36	Hare, explosiveness of nitre	17
Ellet, physical geography Mississippi		Harkness, magnetic observations 2	
valley	13	Harvey, Algse32, 43, 95,	96
Entomologists, circular to	178	, ,	71
Bocene fossils, Conrad	200	Hayden and Meek, palæontology upper	_
Ethnology, circular		Missouri 1	
Ethnology, instructions relative to	160	Hayes, Arctic observations	
Exchanges, list of, part 1	73	Heights, circular 2	236
Exchanges, list of, part 2	85	Henry, Professor, exposition of Smith-	_
Exchanges, list of, to 1858	117	son's bequest	E
Exploring expedition, duplicate shells.	193	Henry, Professor, magnetic telegraph 1	. 19
Panna and dana T /3-		Hildreth, meteorological observations,	
Fauna and flora, Leidy	44	1	
Ferrel, converging series		Hilgard, geology of Louisiana 2	
Fire-ball, Coffin		Hill, solar eclipse	
Fishes, circular		, , ,	90 217
Fishes, families of, Gill		Hoek, meteoric shower	
Fishes, Girard on cottoid		Hudson's Bay, circular	
Flood-tide, Davis	33	Hydrobiinse, Stimpson 2	МL

Indian photographs	216	Magnetic observations, Arctic seas97, 196
Indian portrait gallery, Stanley	53	Magnetic observations, Harkness 233
	220	Magnetic observations, Mexico, Sonntag 114
Insects, Agassiz, classification	16	Magnetic survey, Pennsylvania, Bache 166
Institutions, list of domestic69,		Magnetism, Locke 35
Institutions, list of foreign.64, 154, 225, 2	243	Makah Indians, Swan 220
Japan, geology, Pumpelly	202	Mammals, Baird, catalogue 105
Jargon, Chinook		Mammals, families, Gill
Jargon, Mitchell	68	Marietta, Hildreth, meteorological ob-
Jewett, catalogue system	47	servations 120
Jewett, public libraries	25	Marine algae, Harvey95, 90
Jones, chemical and physiological in-	i	Marine invertebrata, Grand Manan,
vestigations	82	Stimpson
Kane, astronomical observations	129	Mayer, Mexican history and archæology 86 McClintock, meteorological observa-
Kane, magnetic observations, Arctic seas	97	tions, Arctic seas
Kane, meteorological observations, Arc-		Meech, intensity sun's heat
	104	Medulla oblongata, Dean
Kane, physical observations (complete)	- 1	Meek, check-list fossils, cretaceous 177
Kane, tidal observations		Meek, check-list fossils, miocene 183
Kansas, Le Conte, coleoptera	- 1	Meek and Hayden, palsontology, upper
, , ,		Missouri
• ,	155	Melsheimer, catalogue, coleoptera 62
Lapham, antiquities, Wisconsin	70	Meteoric fire-ball, Coffin
•	128	Meteorological directions
Le Conte, catalogue coleoptera	62	Meteorological observations, 1854-59157
Le Conte, classification coleoptera, I	!	182
• • •	126	Meteorological observations, 1855 93
Le Conte, list coleoptera	- 1	Meteorological observations, Caswell 103
Le Conte, new species coleoptera, I 1	- 1	Meteorological observations, Cleaveland 204
Leidy, ancient fauna, Nebraska	58	Meteorological observations, Hayes 190
_ ·	192	Meteorological observations, Hildreth 120
Leidy, extinct sloths  Leidy, fauna and flora	72 44	Meteorological observations, Kane 104
Leidy, fossil ox	41	Meteorological observations, McClintock 146
Lepidoptera, Morris, catalogue	- (	Meteorological observations, Smith 131
Lepidoptera, Morris, synopsis	- 1	Meteorological tables31, 153
Level of lakes, Whittlesey		Meteors, November 217
Libraries, Jewett, account of	25	Mexican history and archeology, Mayer 80
Libraries, Rhees, list of116, 2	- 1	Mexico, list of birds of 185
Library of Congress, catalogue of pub-		Microscopy, Bailey20, 23, 63
lications deposited in	179	Minerals, Egleston, catalogue 156
Library of Smithsonian Institution,		Mining, ancient, Whittlesey 155
catalogue of	179	Miocene fossils, Meek 183
Library, publications of learned socie-	ĺ	Miscellanea, museum 164
ties in73, 85, 117, 1	179	Mississippi valley, ancient monuments
Lieber, vocal sounds, Laura Bridgeman	12	Mitchell and Morehouse, chelonia 159
Lightning-rods, circular	237	Mitchell, venom, rattlesnake
Locke, terrestrial magnetism	35	Mitchell, vocabulary of jargon 68
Lœw, monograph diptera141, 1	171	Mollusca, Carpenter
Longitude, transatlantic, Gould	<b>22</b> 3	200000000000000000000000000000000000000
Loomis, storms	127	
Lucernariæ, Clark	<b>24</b> 2	Mongolia, geology, Pumpelly
Magnetic disenseion Deale 112 101 1	20	Morfit and Booth, chemical arts 2
Magnetic discussion, Bache113, 121, 1	1	Morgan, systems of relationship138, 218
162, 175, 186,	TOO	WANTED DA COMME OF TOWNS THE PROPERTY OF THE P

Morris, catalogue of lepidoptera 118	Prime, check list shells 128
Morris, synopsis lepidoptera 133	Prime, monograph corbiculads 145
Mosasaurus, Gibbes 14	Programme of organization F, J
Muller, magnetism in Mexico 114	Providence, meteorological observations 103
Mummy case, Pickering 208	Psychrometrical tables, Coffin 87
Museum, miscellanea 164	Publications in Smithsonian library.73, 85,
	117, 179
Natural history, bibliography 48	Publications of Smithsonian Institution,
Natural history, directions34, 139	catalogue of74, 203, 226, 245
Nebraska, ancient fauna, Leidy 58	Pumpelly, geology of China and Japan 202
Nebraska, palmontology, Meck and	
Hayden	Queries relative to tornadoes 190
Neptune, ephemeris4, 5, 6, 7, 24	
Neptune, history of discovery, Gould 18	Rainfall in United States 222
Neptune, orbit of, Newcomb 199	Rana pipiens, Wyman 45
Neptune, researches, Walker 3	Rattlesnake, Mitchell's researches 135
Nereis-Boreali-Americana, Harvey95, 96	Relationship, circular, Morgan 138
Nests, instructions for collecting 139	Relationship, systems of, Morgan 218
Neuroptera, Hagen, synopsis	Report of committee on organizationB, L
Newcomb, Neptune	Reptiles, estalogue of 49
New Mexico, Le Conte, coleoptera 126	Reptiles, eretaceous, Leidy 192
Nitre, explosiveness of, Hare 17	Reptiles, families, Cope 231
	Rheometry, electrical, Seochi 36
Occultations, Downes8, 9, 10, 11, 29, 54	Riggs, Dakota grammar and dictionary 40
Olmsted, aurora borealis	Rotary motion, Barnard 240
Oology, Brewer	Runkle, asteroid tables 94
Orbit of Neptune, Newcomb	Runkle, planetary tables79, 94
Orbits, of planets, Stockwell	Russian American circular 207
Oregon, trade language of68, 161	Sabata and sall in Timber Salar 900
Orthoptera, Soudder	Schott, rainfall in United States 222
Osten Sacken, extalogue dipters 102	Schott, reductions, meteorology, etc. 97, 103,
Osten Sacken, monog. diptera.141, 171, 219	104, 120, 129, 130, 131, 146, 196, 198,
Owen, hints on public architecture P	204, 222
Ox, extinot, Leidy	Scudder, catalogue of orthoptera 189
Belmontology of the supper Missouri	Seochi, rheometry         36           Shell circular         176
Palsontology of the upper Missouri, Meek and Hayden 172	Shells, Binney, bibliography 142
Periodical phenomena, directions65, 148	Shells, check list
Periodicals in library of Smithsonian	Shells, exploring expedition 123
Institution73, 85, 117, 179	Shells, land and fresh-water, Binney 143,
Peru, eclipse of sun, Gilliss 100	144. 194
Philology, instructions relative to 160	Sloth, extinct, Leidy 72
Photographs of Indians	Smith, meteorological observations,
Photography, use of telescope, Draper. 180	Washington, Ark
Physical geography, Kliet	Smithson's bequest, exposition E
Physical observations, Hayes 196	Societies, publications of, in Smithso-
Physical observations, Kane	nian library73, 85, 117, 179
Physical tables31, 153	Sonntag, magnetic observations, Mexico 114
Physiological investigations, Jones 82	Squier, aboriginal monuments, New
Pickering, mummy case	York
Planets, orbits, Stockwell	Squier and Davis, ancient monuments. 2
Planta Frémontiana, Torrey 46	Squier and Davis, correspondence rela-
Plants Wrightians, Gray22, 42	tive to memoir K
Popocatapetl, observations of 114	
	Stimpson, check list shells

Stimpson, hydrobiins	60
Stimpeon, marine invertebrata, Grand Torrey, Darlingtonia Californica	61
Manan 50 Torrey, Plants: Frémontians	46
Stockwell, secular variations of orbits. 232 Trade language of Oregon	161
Storms, Loomis	223
Strepomatide, Tryon	, 253
Sun, heat, and light, Meech	gon 68
Swan, Makah Indians 220	
Tables, asteroid, Runkle	170
Tables, meteorological, Guyot	131 155 37 akes 119 197 B, 67 52 241 ,Ma 120 45
Tornado, Chappelsmith	wen 98

• . • .

.

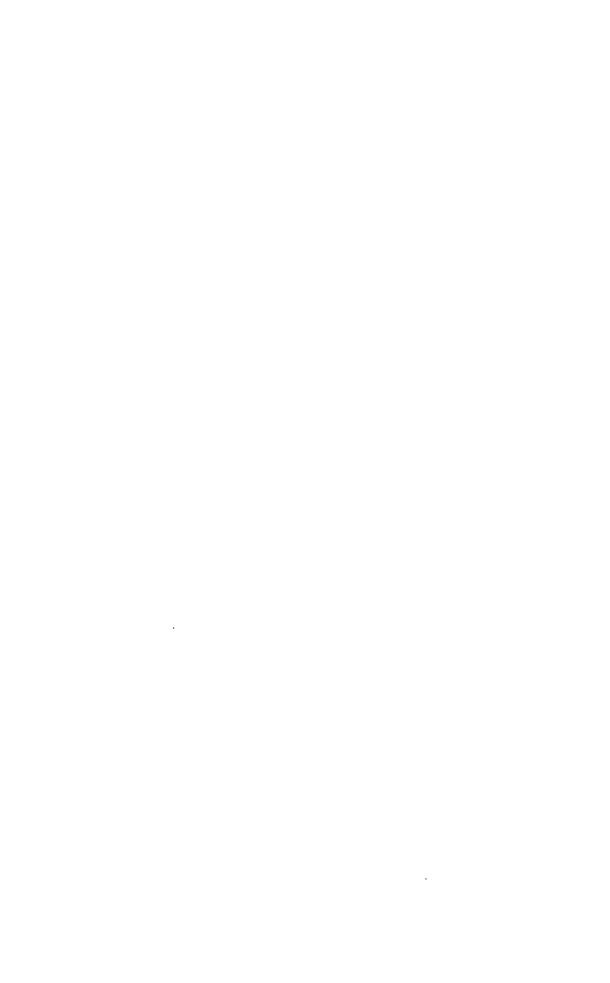
•

•

. • . .

•

___



RETURN CIRC TO▶ 202 I	CULATION DEPAR Main Library	RTMENT						
LOAN PERIOD 1 HOME USE	2	3						
4	5	6						
Renewals and Recha	ALL BOOKS MAY BE RECALLED AFTER 7 DAYS  Renewals and Recharges may be made 4 days prior to the due date.  Books may be Renewed by calling 642-3405.							
DUE AS STAMPED BELOW								
MAY - 9 1990								
MIN APR 2 5 75		-						
<u>MAR 1 1 1993</u>		<del> </del>						
A <del>uto disceire - Fel</del>	01 '93							
OCT 17	995							
RECEIVED								
յու շ 1 1995								
Ju <del>rgen, A HON GEPT</del>								

FORM NO. DD6,

UNIVERSITY OF CALIFORNIA, BERKELEY BERKELEY, CA 94720

# U.C. BERKELEY LIBRARIES CO21113970



